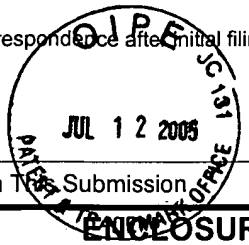
07-14-05

AF
IFW

PTO/SB/21 (08-00)
Approved for use through 10/31/2002
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction act of 1995, no persona are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)



Total Number of Pages in This Submission	124

Application Number	09/472,290
Filing Date	December 27, 1999
First Named Inventor	Patel et al.
Group Art Unit	2122
Examiner Name	Mary J. Steelman
Attorney Docket Number	15-IS-5298 (12528US01)

ENCLOSURES (check all that apply)

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
  - ☐ PTO 1449/08A with references
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Assignment Papers (for an Application)
- ☐ Drawing(s) (sheets)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD Number of CD(s) _____
- ☐ After Allowance Communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☒ Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) (please identify below):

Remarks	Brief on Appeal in response to Notice of Non-Compliant Appeal Brief mailed on June 17, 2005. Submitted after discussion with Examiner Steelman to determine deficiencies (specifically wording of headings according to 41.37(c)).

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual Name	McAndrews Held & Malloy, Ltd.		
Name (Print/type)	Christopher N. George	Registration No. (Attorney/Agent)	51,728
Signature		Date: July 12, 2005	

EXPRESS MAIL DEPOSIT

"Express Mail" mailing label number : EV 640747588 US
Date of Deposit July 12, 2005.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Docket No. 15-IS-5298 (12528US01)

In the Application of:

Patel et al.

U.S. Serial No.: 09/472,290

Filed: December 27, 1999

For: Web-Based Apparatus and Method for Enhancing and Monitoring Picture Archiving and Communications Systems

Examiner: Mary J. Steelman

Group Art Unit: 2122

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail, postage prepaid, Express Mail Label No. EV 640747588 US, in an envelope addressed to: Mail Stop: APPEAL BRIEF-PATENTS, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450, on July 12, 2005.

Christopher N. George
Reg. No. 51,728

BRIEF ON APPEAL

MAIL STOP: APPEAL BRIEF-PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an appeal from an Office Action dated September 23, 2004, in which claims 1-20 were finally rejected. An Advisory Action dated January 4, 2005, maintained the rejection of claims 1-20 but entered an amendment to claim 11 for purposes of appeal. This Appeal Brief is being submitted in support of the Notice of Appeal filed on January 20, 2005, and is being submitted within the one-month time period for response following the notice of non-compliant appeal brief mailed on June 17, 2005. The Applicant respectfully requests that the Board of Patent Appeals and Interferences reverse the final rejection of claims 1-20 of the present application. Pursuant to 37 CFR § 1.17(c), the fee for filing this brief is $500, to be charged to the Deposit Account of GTC, 070845.

07/15/2005 MBERHE 00000003 070845 09472290
01 FC:1402 500.00 DA

REAL PARTY IN INTEREST

General Electric Company, a corporation organized under the laws of the state of New York, and having a place of business at 1 River Road, Schenectady, New York 12345, has acquired the entire right, title and interest in and to the invention, the application, and any and all patents to be obtained therefor, as set forth in the Assignment filed with the present application and recorded on Reel 010504, frame 0001.

RELATED APPEALS AND INTERFERENCES

There currently are no appeals pending regarding related applications.

STATUS OF CLAIMS

Claims 1-20 are pending in the present application. Pending claims 1-20 have been rejected under 35 U.S.C. § 103(a) and are the subject of this appeal. Specifically, claims 1-4, 11-13, and 19-20 have been rejected under 35 U.S.C. § 103(a) as unpatentable in view of U.S. Patent No. 6,178,225 to Zur et al., U.S. Patent No. 6,094,531 to Allison et al., and U.S. Patent No. 6,321,348 to Kobata. Claims 5-10 and 14-18 have been rejected under 35 U.S.C. § 103(a) as unpatentable in view of U.S. Patent No. 6,178,225 to Zur et al. and U.S. Patent No. 6,321,348 to Kobata.

STATUS OF AMENDMENTS

An amendment to pending claim 11 was filed after final rejection to correct a typographical error in the claim. The amendment was entered by the Examiner for purposes of appeal. There are no other amendments pending in the present application.

SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to a system and method for remotely enhancing and monitoring a Picture Archiving and Communication System (PACS).[1] PACS are used

[1] Application No. 09/472,290 ("Application"), at page 1, lines 3-5 (attached as Evidence Appendix A).

for storing, observing and analyzing images obtained in medical applications.[2] PACS servers and workstations may be found in hospitals, clinics or laboratories, for example.[3] PACS servers and workstations often encounter software bugs that need to be fixed.[4] Additionally, rapid improvements in image viewing and analysis software often prompt users to request software updates on site.[5] Such on-site error correction and software installation or patching may be very costly and time-consuming.[6] For example, the amount of a field engineer's time taken to install software or software upgrades may be represented as (T * N) + X + Y * (N – 1), where T is the time to install the software, N is the number of computers to be upgraded, X is the time taken for the field engineer to travel to and from the site, and Y is the average time taken for the average time taken for the engineer to go from one computer to another.[7] Additionally, it is very costly and time-consuming for the field engineer to trouble-shoot errors occurring at individual workstations.[8] Prior Picture Archiving and Communication Systems have not provided a system or method which reduces the high cost and time-consuming effort to install software and trouble-shoot errors on individual PACS workstations.[9]

Certain embodiments of the present invention provide a system 200 and method 400 for remotely enhancing a PACS 200 by simultaneously installing software to a plurality of PACS workstations 210 via a network 204, such as an Internet connection.[10] A web-based server 206 including an installer 208 is used to simultaneously install software to the plurality of PACS workstations 210.[11] A remote terminal 202 communicates with the web-based server 206 to control functionality at the web-based server 206.[12] Referring to Figure 4, the method 400 for remotely enhancing a PACS 200 establishes (step 402) a network connection 204 between the remote terminal 202 and the

[2] Application, at page 1, lines 6-7.
[3] Application, at page 1, lines 9-12.
[4] Application, at page 2, lines 17-19.
[5] Application, at page 1, lines 13-15.
[6] Application, at page 2, lines 1-10.
[7] Application, at page 2, lines 1-16.
[8] Application, at page 2, lines 5-8.
[9] Application, at page 2, line 27 – page 3, line 2.
[10] Application, at page 5, lines 1-3 and lines 13-15.
[11] Application, at page 6, lines 18-29.
[12] Application, at page 6, lines 11-22.

web-based server 206.[13] A user may log on (step 403) to the web-based server 206 and be authenticated.[14] The user at the remote terminal 202 may make available software or a software patch for installation to the PACS workstations 210. Then, the web-based server 206 is directed (step 404) by the user to simultaneously install (step 406) software to the plurality of PACS workstations 210.[15] Once software installation is complete, the web-based server 206 may be configured to send (step 408) a message to the remote terminal 202, indicating whether the software installation was successful.[16]

As a result, the time to install software on a PACS workstation 210 is reduced from (T * N) + X + Y * (N – 1) to T + X + Y, where T is the time taken to install the software, N is the number of workstations 210 to be upgraded, X is the time it takes the remote terminal 202 to copy the file(s) to the web-based server 206, and Y is the sum of time it takes for the web-based server 206 to copy the files to the workstations 210.[17] Once the files are copied to the workstations 210, the installer 208 may then simultaneously install the files to the workstations 210, resulting in considerable savings of time, money, and resources.[18]

Certain embodiments of the present invention provide a system 300 and method 500 for remotely monitoring a PACS 300 via a network 204 such as the Internet.[19] A web-based server 206 including a retriever 302 is used to monitor the PACS 300 for errors or to search, extract, or download files of interest.[20] Referring to Figure 5, a method 500 for remotely monitoring a PACS 300 establishes (step 402) a network connection 204 between a remote terminal 202 and a web-based server 206.[21] The web-based server 206 is directed by the remote terminal 202 to retrieve (step 502) data, such as image or log files, from at least one PACS workstation 210.[22] The web-based server

[13] Application, at page 5, line 23 – page 6, line 4 and Figure 4.
[14] Application, at page 6, lines 5-10 and Figure 4.
[15] Application, at page 6, lines 17-29 and Figure 4.
[16] Application, at page 6, line 30 – page 7, line 2 and Figure 4.
[17] Application, at page 7, lines 3-23.
[18] Application, at page 7, lines 23-29.
[19] Application, at page 7, line 30 – page 8, line 5.
[20] Application, at page 8, lines 5-8.
[21] Application, at page 5, line 23 – page 6, line 4 and Figure 5.
[22] Application, at page 8, lines 24-27 and Figure 5.

206 is then directed to search (step 503) for an error indication in the retrieved data.[23] The web-based server 206 retrieves the data (step 504) and extracts a file (step 505) for analysis to identify an error.[24] The data is transmitted (step 506) to a remote terminal 202.[25] The error is determined at the remote terminal 202 and corrected remotely via the web-based server 206.[26] For example, software may be periodically updated (step 507) in response to an error detected at least one PACS workstation 210.[27]

Thus, certain embodiments of the present invention provide a system and method for remotely monitoring and updating a picture archiving and communication system with a plurality of workstations by periodically providing software for installation and by monitoring the workstations for errors, identifying the errors, and downloading software patches to correct those errors.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

I. Are claims 1-4, 11-13, and 19-20 unpatentable under 35 U.S.C. § 103(a) in view of U.S. Patent No. 6,178,225 to Zur et al., U.S. Patent No. 6,094,531 to Allison et al., and U.S. Patent No. 6,321,348 to Kobata?

II. Are claims 5-10 and 14-18 unpatentable under 35 U.S.C. § 103(a) in view of U.S. Patent No. 6,178,225 to Zur et al. and U.S. Patent No. 6,321,348 to Kobata?

GROUPING OF CLAIMS

The claims do not stand or fall together.

Claims 1-4, 11-13, and 19-20 stand or fall together.

Claims 5-10 and 14-18 stand or fall together, and are believed to be separately patentable from claims 1-4, 11-13 and 19-20, as will be explained in the following argument section.

For the sake of simplicity, Applicant has elected to only argue the substantive merits of the patentability of independent claims 1, 5, 11, 14, 17, and 19. If any of these

[23] Application, at page 8, lines 27-29 and Figure 5.
[24] Application, at page 8, lines 29-31 and Figure 5.
[25] Application, at page 8, line 31 – page 9, line 1 and Figure 5.
[26] Application, at page 8, lines 9-23 and Figure 5.

claims are deemed patentable, then the claims dependent thereon must also be deemed patentable.

ARGUMENT

I. For Obviousness, The Law Is Well Settled That There Must Be A Suggestion Or Motivation To Combine References.

The law is well settled that "obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion or incentive to do so."[28] Additionally, the Examiner is not permitted to use an improper hindsight reconstruction of the claimed invention in rejecting the claims. Use of hindsight analysis has been specifically condemned by the Federal Circuit:

> The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification ... Here, the Examiner relied upon hindsight to arrive at the determination of obviousness. It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This Court had previously stated that "one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention."[29]

When a prior art reference must be modified to show a claimed invention, the prior art must suggest the modifications in order to make the claims obvious under 35 U.S.C. § 103.[30] The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on the applicant's disclosure.[31]

---

[27] Application, at page 9, lines 1-3 and Figure 5.
[28] *ACS Hospital Systems, Inc. v. Montfiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929 (Fed. Cir. 1984).
[29] *In Re John Fritch*, 972 F.2d 1260, 23 U.S.P.Q. 2d 1780, 1783 (Fed. Cir. 1992). See also *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1135, 1143 n.5, 229 U.S.P.Q. 182, 187 n.5 (Fed.Cir. 1986); MPEP 2141.
[30] *ACS Hospital Systems*, 732 F.2d at 1577.
[31] *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q. 2d 1438 (Fed. Cir. 1991).

It is not permissible to pick and choose among the individual elements of assorted prior art references to re-create the claimed invention, but rather "some teaching or suggestion in the references to support their use in the particular claimed combination" is needed.[32] That is, in order to combine two or more prior art references to make claims obvious under 35 U.S.C. § 103, the prior art references must suggest the combination of their teachings.[33] In *Ex parte Hiyamazi*[34], the Board of Patent Appeals and Interferences reversed a rejection based on a combination of references, stating, in part:

> Under 35 USC § 103, where the Examiner has relied upon the teachings of several references, the test is whether or not the reference viewed individually and collectively would have suggested the claimed invention to the person possessing ordinary skill in the art. Note *In re Kaslow*, 707 F.2d 1366, 107 USPQ 1089 (Fed.Cir. 1983). It is to be noted, however, that citing references which merely indicate the isolated elements and/or features recited in the claims are known is not a sufficient basis for concluding that the combination of claimed references would have been obvious. That is to say, there should be something in the prior art or a convincing line of reasoning in the answer suggesting the desirability of combining the claimed invention. Note *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed.Cir. 1986).[35]

The law also is very clear that a finding of obviousness can only be premised on prior art references from analogous areas of art and not on art from nonanalogous areas. Specifically, the Federal Circuit has applied the following two-step test:

> The determination that a reference is from a nonanalogous art is therefore twofold. First, we decide if the reference is within the field of the inventor's endeavor. If it is not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved.[36]

---

[32] *Symbol Technologies, Inc. v. Opticon, Inc.* 935 F.2d 1569, 1576, 19 U.S.P.Q.2d 1241 (Fed. Cir. 1991).
[33] *ACS Hospital Systems*, 732 F.2d at 1577.
[34] *Ex parte Hiyamazi*, 10 U.S.P.Q.2d 1393 (Bd. Pat. App. & Interf. 1988).
[35] *Id.* at 1394.
[36] *In re Deminski*, 796 F.2d 436 (Fed. Cir. 1986).

II. Claims 1-4, 11-13, and 19-20 are patentable under 35 U.S.C. § 103(a) in view of Zur (U.S. 6,178,225), Allison (U.S. 6,094,531), and Kobata (U.S. 6,321,348).

In the Final Office Action of September 23, 2004, the Examiner rejected claims 1-4, 11-13 and 19-20 under 35 U.S.C. 103(a) as being unpatentable over Zur (U.S. Patent 6,178,225), Allison (U.S. Patent 6,094,531), and Kobata (U.S. Patent 6,321,348).[37] 35 U.S.C. 103(a) states:

> A patent may not be obtained thought the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

To render a claim obvious, there must be some suggestion or motivation to combine the references.[38] Additionally, there must be a reasonable expectation of success.[39] Finally, the combined references must teach or suggest all the claim limitations.[40]

Pending independent claims 1, 11, and 19 read as follows:

1. A method for remotely enhancing a picture archiving and communication system, said method comprising:
establishing a network connection with a web-based server;
periodically providing software for installation to a plurality of picture archiving and communication system workstations in response to an error detected by at least one workstation;
reporting the error to the web-based server;
directing the web-based server to simultaneously install the software to the plurality of picture archiving and communication system workstations in communication with the web-based server; and
simultaneously installing software to the plurality of picture archiving and communication system workstations.

11. An apparatus for remotely enhancing a picture archiving and communication system comprising:

---

[37] The Final Office Action mailed on September 23, 2004 is attached as Evidence Appendix B.
[38] M.P.E.P. § 706.02(j) (May 2004).
[39] *Id.*
[40] *Id.*

a remote first terminal in communication with a web-based server via an Internet connection, said remote first terminal remotely monitoring a picture archiving and communication system workstation to generate a remote signal requesting installation of software in response to an error reported by the workstation;

a plurality of picture archiving and communication system workstations connected to said web-based server; and

said web-based server comprising an installer for simultaneously installing software to said plurality of picture archiving and communication system workstations responsive to said remote signal.

19. A method for remotely enhancing a picture archiving and communication system, said method comprising:

connecting to a web-based server from a remote terminal on the Internet;

instructing the web-based server to update pre-existing software on a plurality of picture archiving and communication system workstations in communication with the web-based server;

simultaneously updating said pre-existing software on the plurality of picture archiving and communication system workstations.

A. Claims 1-4, 11-13 and 19-20 are patentable under 35 U.S.C. § 103(a) in view of Zur (U.S. 6,178,225), Allison (U.S. 6,094,531) and Kobata (U.S. 6,321,348) because there is no suggestion or motivation in the references or the ordinary level of skill in the art to combine Zur, Allison, and Kobata.

Zur (U.S. Patent No. 6,178,225)

Zur is the foundational reference relied upon by the Examiner in rejecting claims 1-20 throughout the examination of the present application. In the Final Office Action of September 23, 2004, the Examiner states that Zur may be part of a Picture Archiving and Communication System (PACS).[41] The Examiner also relies on the fact that Zur has "internet connectivity" to allege its relevance.[42] However, the Examiner admits that Zur does not teach a method to simultaneously install software to a plurality of PACS workstations. The Examiner also admits that Zur does not disclose detecting or reporting an error to a web-based server.[43]

[41] Final Office Action mailed September 23, 2004, page 2, referring to column 4, line 38 of Zur.
[42] *Id.* at pages 2-3, referring to column 4, lines 53-54 of Zur.
[43] *Id.* at page 4.

The Applicant submits that Zur is directed to metering x-ray image exposures for billing purposes.[44] Mr. Zur and his co-inventors have tried to improve the process of billing or charging users for the use of x-ray services based on charging for usable x-ray images and not charging for x-ray images that cannot be used for diagnosis. That is, Zur seeks to reduce the fees charged to those using a digital X-ray imaging system by billing them only for "accepted" or usable images and not for "rejected" or unusable images.[45] The service center of Zur then generates and distributes billing statements to users.[46] A thorough review of Zur shows that the Zur patent simply does not mention identifying errors, correcting errors, installing software, or updating software.

The "management" and "installation" of x-ray imaging facilities and services disclosed by Zur is quite clearly a reduction of costs to a user through metering of usable and unusable images and generation of billing output.[47] The "service" center of Zur is a billing service center for generating bills and statements for x-ray imaging customers.[48] It is illustrative of the narrow focus of Zur that Zur does not even discuss improving image quality or imaging system performance but, rather, purely focuses on billing and generating usable and unusable exposure reports. In fact, it is difficult to read a paragraph in the Zur patent and not find a mention of ***metering*** or ***billing*** for usable images.

The service center of Zur preferably receives usage statistics from digital X-ray imaging facility metering systems via the Internet.[49] That is, the service center is accessed by imaging facilities, and the service center then generates bills based on the image usage statistics received from facility metering systems.[50] Alternatively, Zur mentions that the service center may electronically poll individual imaging facility metering systems to obtain usage statistics.[51] Simply stated, Zur is concerned with

---

[44] Zur, Abstract and column 1, lines 43-50 (attached as Evidence Appendix C).
[45] *See, e.g.*, Zur, column 5, lines 43-65.
[46] Zur, column 5, lines 30-33.
[47] *See* Zur, Background and Summary, for example, column 1, lines 5-67, column 2, lines 1-67, and column 3, lines 1-3.
[48] Zur, column 6, lines 5-17.
[49] Zur, column 5, lines 19-29.
[50] Zur, column 5, lines 30-34.
[51] Zur, column 6, lines 42-50.

accurate and efficient billing of users of x-ray imaging facilities based on an actual number of accepted images as opposed to a total number of images taken.

No error correction, error analysis, or software update functionality is mentioned or envisioned in the disclosure of Zur. Zur includes no mention of even an image quality improvement system or method, let alone a system or method that diagnoses and corrects errors or updates software in a picture archiving and communication system itself, such as the system and method claimed in the present application. Thus, Zur is a nonanalogous and inapplicable reference upon which to base a rejection of the claimed invention under 35 U.S.C. § 103 or § 102.

Allison (U.S. Patent No. 6,094,531)

To the metering and billing system of Zur, the Examiner attempts to combine an operating system testing environment described in Allison.[52] The Examiner asserts that Allison teaches a method for automatic simultaneous installation on a plurality of machines/terminals/workstations/clients.[53] However, the Applicant submits that, in fact, Allison relates to an experimental computer testing platform for testing software on test computers.[54] Allison neither mentions nor has any logical relationship to a medical environment or to a picture archiving and communication system (PACS), which, by definition and as described in the present application, is a medical system used in a medical environment. Additionally, as the Examiner acknowledges, Allison makes no mention of error detection or correction.[55]

When software or hardware needs to be tested, Allison looks for an available test machine.[56] When a test machine becomes available, the dispatcher machine is notified which machine is available for a test.[57] The dispatcher machine determines whether one or more of the tests needed to be run are capable of being performed by the test

[52] Final Office Action mailed September 23, 2004, pages 3-4.
[53] *Id.*, at page 3, referring to Figure 1 and column 4, lines 43-48 of Allison.
[54] Allison, Abstract, column 2, lines 25-29, column 3, lines 60-67, and column 4, lines 10-22 (attached as Evidence Appendix D).
[55] Final Office Action mailed September 23, 2004, page 4.
[56] Allison, column 3, lines 11-27.
[57] Allison, column 3, lines 23-27.

machine.[58] If one or more of the tests are capable of being performed by the test machine, the dispatcher prioritizes the tests and instructs the test machine to perform the test with the highest priority.[59] The test machine then performs the test.[60] If no test machines are available to perform a test, the dispatcher determines which of the test machines capable of performing the test is executing the lowest priority job.[61] Then, the lowest priority job is suspended to allow the higher priority job to be executed.[62]

The installer installs an operating system and launcher program on a test machine.[63] The launcher program communicates with the dispatcher machine(s) to let the dispatcher machine(s) know that the test machine is available for test.[64] After testing has been completed, the operating system is removed so that another operating system may be installed on the machine for a subsequent test.[65] In this way, operation of a new piece of software and/or hardware being developed by a computer manufacturer, such as Hewlett-Packard, may be tested under a variety of different operating systems. The operating systems and software are ***temporarily*** installed for testing purposes and then ***removed or reset*** to a base state.[66]

The Applicant respectfully submits that it is readily apparent from the disclosure of the Allison patent that the Allison patent only discloses a computer and software ***testing*** system. Allison discusses a prioritized testing system involving a dispatcher machine, installer machine, and a plurality of testing machines with launcher software allowing testing of new software or hardware.[67] It would be unreasonable to extend the scope of the Hewlett-Packard patent beyond the computer testing system disclosed. Furthermore, there is no suggestion in the art to do so.

In the present invention, PACS workstations store valuable data and records and provide software services to users in a medical or healthcare environment. A system,

---

[58] Allison, column 3, lines 28-34.
[59] Allison, column 3, lines 32-39.
[60] Allison, column 3, lines 39-40.
[61] Allison, column 7, lines 25-32.
[62] Allison, column 7, lines 32-34.
[63] Allison, column 4, lines 10-12.
[64] Allison, column 4, lines 12-22.
[65] Allison, Figures 4 and 5, column 10, lines 20-23, and column 12, lines 32-45.
[66] Allison, column 12, lines 40-45.
[67] *See, e.g.*, Allison, Figures 1-5.

such as the system described in Allison, with variable operating system installation followed by a wiping or resetting of information on that system would not be useful in such an environment. Indeed, a PACS system that was continually being reset or operated in an unstable, experimental mode would be unusable by medical professionals and would undoubtedly fail government-mandated safety inspections and regulatory approval. Additionally, simply because the PACS system of the pending claims is networked does not mean that it is analogous to the software testing system of Allison or to the metering and billing system of Zur. Thus, Allison also is a nonanalogous and inapplicable reference upon which to base a rejection of the claimed invention under 35 U.S.C. § 103 or § 102. Additionally, Allison bears no similarity or relationship to Zur and has no connection or relevance to a digital X-ray imaging facility or a metering and billing system. One of ordinary skill in the art at the time of the invention of pending claims 1-20 would not have looked to Zur or Allison and would not have combined the two references when developing the system and method of claims 1-20.

Kobata (U.S. Patent No. 6,321,348)

Then, the Examiner asserts that Kobata would have been combined with both Zur and Allison by one of ordinary skill in the art to arrive at the Applicant's claimed invention.[68] The Examiner asserts that Kobata discloses a client/server Internet based application with a system provided to detect the infrastructure at the client side.[69] The Examiner asserts that Kobata automatically transmits required software to the client to remotely identify problems to install new software at the client.[70] The Examiner asserts that Kobata uses artificial intelligence at the server to filter incoming data and automatically transfer new software to the client.[71]

The Applicant submits that Kobata discloses a system for ascertaining the demography of Internet users of personal computers (PCs) and providing software or consulting services based on the users' infrastructure data.[72] This demography data

[68] Final Office Action mailed September 23, 2004, pages 4-5.
[69] *Id.* at pages 4-5, referring to Abstract and column 2, lines 42-51 of Kobata.
[70] *Id.*
[71] *Id.*
[72] Kobata, Abstract and column 1, lines 12-15 (attached as Evidence Appendix E).

includes "CPU power, hard disk space, applications installed, network connectivity, and log-in history".[73] Kobata neither mentions nor has any logical relationship to a medical environment or to a picture archiving and communication system (PACS), which is a system used in a medical environment. Kobata is concerned with compatibility issues between computer peripherals and personal computers.[74] The Kobata system provides consulting advice to permit installation of peripherals or other personal computer equipment at the client PC.[75]

Although Kobata mentions remotely identifying problems, it does so based on analysis of user demography data and log-in or access history for the individual PC.[76] That is, software serial number and user infrastructure data are used to identify compatibility problems.[77] The infrastructure data envisioned by Kobata is listed as software serial number, CPU information, IP address, CPU information, hard disk space, network connection, inventory or application list, and log-in history.[78] The system of Kobata identifies compatibility errors and refers consulting services to the client.[79] Kobata specifically states that it is ***important*** to install client software ***at*** the ***individual*** client site.[80] If an error requires anything other than a standard reinstall or control of the software, expert consultant services are used to analyze and correct the problem.[81] The very limited, few-column disclosure of Kobata leaves little room for expansion beyond the stated disclosure.

Thus, Kobata's purpose is to monitor remotely the configuration of personal computers with hardware and software configurations controlled by the end user, and download software or reconfigure individual personal computers to resolve compatibility problems. This purpose is very different from the present invention, which teaches responding to a PACS workstation error reported by a PACS workstation by simultaneously updating or installing new software on a plurality of PACS workstations.

---

[73] Kobata, Figure 1 and column 2, lines 32-34.
[74] Kobata, column 1, lines 18-41.
[75] Kobata, Abstract and column 1, lines 60-64.
[76] Kobata, column 1, lines 66-67 and column 2, lines 1-51.
[77] Kobata, column 2, lines 30-51.
[78] Kobata, column 3, lines 50-59.
[79] Kobata, Abstract and column 4, lines 11-28.
[80] Kobata, column 4, lines 19-24.

Because Kobata is focused on determining installation compatibility problems in personal computers, a person of ordinary skill in the art of medical image storage and analysis would not have looked to the PC compatibility system of Kobata in attempting to develop a remote installation and error correction system for a PACS. Therefore, as above, Kobata is yet another inapplicable and nonanalogous reference upon which to base a rejection of the claimed invention under 35 U.S.C. § 103 or § 102. Additionally, Kobata shares no common ground with either Allison or Zur and has no relationship to a medical PACS. Any system combining the teaching of Zur, Allison and Kobata would be too unstable and unpredictable to accomplish the functionality recited in claims 1-20.

Motivation to Combine?

The Applicant submits that a person of ordinary skill in the art in 1999 would not think to consider an image billing system, such as Zur, or a personal computer testing platform, such as Allison, when developing an error detection and correction system for a picture archiving and communication system in use in a healthcare environment. Zur may mention use with a PACS, but the system of Zur is not a PACS. Rather than being a "generic" installation system, Allison is a very specific testing system for installing an operating system on a testing machine, scheduling a test, and then wiping the test machine to prepare it for another test. Furthermore, one of ordinary skill in the art in 1999 would not think to utilize a compatibility-resolution system, such as Kobata, to detect and correct errors or update software in a picture archiving and communication system for use with medical images in a medical environment. A system combining the teaching of Zur, Allison and Kobata would be too unpredictable to function for its intended purpose.

The limitations of the pending claims should be examined as a whole in relation to the prior art. The prior art references must also be considered as a whole and must suggest the desirability and thus the obviousness of making the combination. In addition, the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention. The Applicant maintains that one of ordinary skill in the art at the time of the invention of pending claims 1-20 simply would not have looked

[81] Kobata, column 4, lines 19-54.

to Zur or Allison or Kobata, and would not have combined Zur with Allison and then combined Zur and Allison with Kobata when developing the system and method of claims 1-20.

The Examiner asserts that one of ordinary skill in the medical image storage and analysis art would have looked to Zur because it includes a PACS and would have modified Zur by Allison because Zur has a network, Allison has a network, and a PACS is networked.[82] Many systems are networked, but clearly all networked systems are not analogous to one another. Such a position would impermissibly extend the scope of networked system patents. Similarly, because an invention involves software or computing devices does not mean that any system involving software or computing devices is analogous art. Additionally, the Examiner asserts that it would have been obvious to one of ordinary skill in the art to have modified the Zur metering system which may include a PACS to include the installation and testing system of Allison and further to included the compatibility error identification system of Kobata because monitoring is well known in the art.[83] This combination is not suggested in the art and would not operate predictably enough to function for its intended purpose.

Throughout several interviews, the Examiner has maintained that the combination is "obvious" without pointing to specific examples or suggestions in the art as to why such a combination would have been obvious in 1999 (as opposed to six years later after reviewing the disclosure of the present application). When queried about whether Official Notice has been taken because the connections that the Examiner asserts are nowhere to be found in the cited art, the Examiner has explicitly stated that the Examiner is ***not*** taking Official Notice in support of any rejection.[84] Thus, the Examiner has no support for finding the alleged combination obvious and invalidating of the pending claims.

In combining Zur, Allison and Kobata, the Examiner has merely picked and chosen among isolated, individual elements of assorted prior art references in an attempt to re-create the Applicant's claimed invention. There is no teaching or suggestion in

---

[82] Final Office Action mailed September 23, 2004, page 4.
[83] Final Office Action mailed September 23, 2004, page 5; see also Advisory Action mailed January 4, 2005, pages 2-7 (attached as Evidence Appendix F).
[84] Advisory Action mailed January 4, 2005, page 7.

these references to support their use in the particular claimed combination. In attempting to combine these references, the Examiner has "fall[en] victim to the insidious effect of a hindsight syndrome wherein that which only the inventor has taught is used against its teacher."[85] The combination of different art found in Zur, Allison, and Kobata is clearly untenable, and the Examiner's rejection should not be allowed to stand.

B. Claims 1-4, 11-13 and 19-20 are patentable under 35 U.S.C. § 103(a) in view of Zur (U.S. 6,178,225), Allison (U.S. 6,094,531) and Kobata (U.S. 6,321,348) because even a hypothetical combination of Zur with Allison and with Kobata would not teach or suggest all of the limitations recited in claims 1-4, 11-13 and 19-20.

The Applicant submits that claims 1-4, 11-13 and 19-20 are distinguishable over Zur, Allison and Kobata for all of the reasons discussed in Section II.A of this Appeal Brief. The Applicant submits that any hypothetical combination of these systems would produce some form of an experimental x-ray testing system that includes metering and billing capabilities and compatibility testing capabilities. A user would be allowed to test, wipe, and replace the operating system software for the metering and billing system to help ensure compatibility between the meter, the service center, and the image source. Such a system is different from and does not teach or suggest the system and method described in the pending claims 1-20.

The combination would not teach or suggest a method for remotely enhancing a picture archiving and communication system (PACS) including establishing a network connection with a web-based server and periodically providing software for installation to a plurality of PACS workstations in response to an error detected by one or more of the workstations. These limitations are disclosed in independent claim 1. The combination does not teach or suggest directing the web-based server from a remote terminal to simultaneously install the software to the plurality of PACS workstations and simultaneously installing the software on those workstations. Although Kobata does relate in some way to errors (peripheral compatibility problems), its purposes are very different from the present invention. Kobata is directed to analysis of demographic data

[85] *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 U.S.P.Q. 303, 313 (Fed.Cir. 1983).

such as CPU power, disk space, and applications installed to determine if compatibility problems exist and then refer a user to expert consulting services. The invention of claim 1 recites that the PACS workstation detects and report errors for correction via the web-based server from a remote terminal, while Kobata discovers installation problems (i.e., incompatibilities) based on analysis of broad demographic data at the server. There is no connection between a remote terminal, a web-based server, and a plurality of PACS workstations in Zur, Allison, or Kobata. Therefore, the Applicant respectfully submits that independent claim 1 and its dependent claims 2-4 should be in condition for allowance.

The hypothetical combination of Zur, Allison, and Kobata does not teach or suggest a system with a remote first terminal remotely monitoring a PACS workstation to generate a remote signal requesting installation of software in response to an error reported by the workstation and a web-based server including an installer for simultaneously installing software to a plurality of PACS workstations responsive to the remote signal. These limitations are recited in claim 11. Rather, Allison installs an operating system in a testing environment in order to test new products. Neither Zur nor Allison discusses identifying errors or error correction. Zur, Allison, and Kobata do not install software on a plurality of medical imaging workstations in response to a remote signal monitoring a medical imaging workstation. There is no connection between a remote terminal, a web-based server and a plurality of PACS workstations, and Zur, Allison, or Kobata.

Kobata does not detect errors in the same way or for the same purposes as the present invention. It looks for compatibility problems based on an analysis of an individual workstation's demography data, such as CPU power, hard disk space, and applications installed. Pending claims disclose locating an error message reported by the PACS software in a log file, not determination of compatibility problems through consulting services or artificial intelligence analysis of general demography data. Thus, the Applicant respectfully submits that claims 11-13 should be allowable.

In addition, the combination of Zur, Allison, and Kobata does not teach or suggest connecting to a web-based server from a remote terminal on the Internet, instructing the web-based server to update pre-existing software on a plurality of PACS workstations in

communication with the web-based server, and simultaneously updating the pre-existing software on the plurality of PACS workstations. These limitations are recited in independent claim 19. Rather, Allison discusses an operating system replacement on a test machine or installation of an operating system on a blank test machine for testing purposes only. Additionally, there is no updating in Zur, Allison, or Kobata on multiple machines of software that is already on all of the multiple machines. There is no connection between a remote terminal, a web-based server, and a plurality of PACS workstations in Zur, Allison, or Kobata. Therefore, the Applicant respectfully submits that claims 19 and 20 should be allowable.

Because Zur in view of Allison and further in view of Kobata does not teach or suggest any of the limitations discussed above, let alone every limitation recited in claims 1, 11 and 19, the hypothetical combination of Zur, Allison and Kobata does not render obvious claims 1, 11 and 19, nor does it render obvious claims 2-4, 12-13 and 20, which depend from claims 1, 11 and 19, respectively.

III. Claims 5-10 and 14-18 are patentable under 35 U.S.C. § 103(a) in view of Zur (U.S. 6,178,225) and Kobata (U.S. 6,321,348).

In the Final Office Action of September 23, 2004, the Examiner rejected claims 5-10 and 14-18 under 35 U.S.C. 103(a) as being unpatentable over Zur (U.S. Patent 6,178,225) in view of Kobata (U.S. Patent 6,321,348). To render a claim obvious, there must be some suggestion or motivation to combine the references.[86] Additionally, there must be a reasonable expectation of success.[87] Finally, the combined references must teach or suggest all the claim limitations.[88]

Pending independent claims 5, 14 and 17 read as follows:

5. A method for remotely monitoring a picture archiving and communication system, said method comprising:

establishing a network connection with a web-based server from a remote terminal;

---

[86] MPEP § 706.02(j) (May 2004).
[87] *Id.*
[88] *Id.*

directing the web-based server to retrieve data from at least one file from at least one of a plurality of picture archiving and communication system workstations in communication with the web-based server, the data including a log containing an error indicator;

retrieving the data from the at least one file;

transmitting the data to a remote terminal;

identifying an error occurring at at least one of said plurality of picture archiving and communication system workstations based on said error indicator in said data; and

updating software stored on at least one of said plurality of picture archiving and communication system workstations to correct said error.

14. An apparatus for remotely monitoring a picture archiving and communication system comprising:

a remote first terminal in communication with a web-based server via a network connection, said remote first terminal comprising a remote signal generated in response to an error detected by a picture archiving and communication system workstation;

a plurality of picture archiving and communication system workstations connected to said web-based server; and

said web-based server comprising a data retriever for retrieving data from at least one of said plurality of picture archiving and communication system workstations responsive to said remote signal, said web-based server providing remote identification and correction of an error at at least one of said plurality of picture archiving and communication system workstations by updating software stored on at least one of said plurality of picture archiving and communication system workstations.

17. A method for remotely monitoring a picture archiving and communication system, said method comprising:

connecting to a web-based server on a network;

instructing the web-based server to extract log data from each of a plurality of picture archiving and communication system workstations in communication with the web-based server, wherein the log data indicates an error occurring at the plurality of picture archiving and communication system workstations;

transmitting the log data to a remote terminal for analysis of the error; and

remotely correcting the error at the plurality of picture archiving and communication system workstations from a remote terminal using the web-based server.

A. Claims 5-10 and 14-18 are patentable under 35 U.S.C. § 103(a) in view of Zur (U.S. 6,178,225) and Kobata (U.S. 6,321,348) because there is no suggestion or motivation in the references or the ordinary level of skill in the art to combine Zur and Kobata.

The Applicant submits that claims 5-10 and 14-18 are distinguishable over Zur and Kobata for all of the reasons discussed in Section II of this Appeal Brief. The Applicant submits that there is no suggestion or motivation in the art or the references themselves to modify Zur with Kobata, as discussed above in Section II.A. One of

ordinary skill in the medical image storage and analysis art would have had no motivation or suggestion at the time of invention to combine the demographic and compatibility analysis system of Kobata with the metering and billing system of Zur. Zur makes no mention of compatibility or system component analysis, and Kobata makes no mention of medical application or metering. Kobata makes no mention of a picture archiving and communication system. Zur makes minimal mention of use with a PACS, and makes no mention of remote monitoring or PACS workstation error analysis, or remote software installation. Additionally, such a system of Zur and Kobata would not have a reasonable expectation of success for the intended purpose recited in claims 5-10 and 14-18.

The Examiner asserts that because Zur broadly relates to images, could be used with a PACS, and has a network connection, it would be combined with the compatibility detection and consulting system of Kobata.[89] The Applicant submits that such a combination would be an impermissible expansion of the ordinary level of skill in the art at the time of the invention. The Examiner has stated that no Official Notice has been taken, and no references or other evidence have been cited by the Examiner to support that certain features were well known in the art at the time of invention. In attempting to combine the cited references, the Examiner has relied upon an impermissible hindsight analysis and has looked at the level of skill in the art in 2004 rather than at the time of invention at least 5 years prior. In combining Zur and Kobata, the Examiner has merely picked and chosen among isolated, individual elements of assorted prior art references in an attempt to re-create the Applicant's claimed invention. There is no teaching or suggestion in these references to support their use in the particular claimed combination. The combination of different art found in Zur and Kobata is clearly untenable, and the Examiner's rejection should not be allowed to stand.

B. Claims 5-10 and 14-18 are patentable under 35 U.S.C. § 103(a) in view of Zur (U.S. 6,178,225) and Kobata (U.S. 6,321,348) because even a hypothetical combination of Zur with Kobata would not teach or suggest all of the limitations recited in claims 5-10 and 14-18.

[89] Final Office Action mailed September 23, 2004, pages 12-13.

The Applicant submits that claims 5-10 and 14-18 are distinguishable over Zur and Kobata for all of the reasons discussed in Sections II and III.A of this Appeal Brief. The Applicant submits that any hypothetical combination of these systems would produce some form of metering and billing system which allows a compatibility analysis or would provide a metering and billing system to charge users for demographic analysis and compatibility consulting services. Neither hypothetical system teaches or suggests the limitations recited in claims 5-10 and 14-18.

For example, the combination would not teach or suggest identifying an error occurring at one or more PACS workstations based on an error indicator retrieved from one or more files at one or more PACS workstations at a remote terminal in communication with a web-based server. The combination also would not teach or suggest directing updates of special-purpose medical imaging software from a remote terminal. These limitations are recited in independent claim 5 of the present application. Rather, Kobata identifies potential peripheral device installation problems based on expert consulting services or artificial intelligence analysis of demographic data on a personal computer in a general-purpose computing environment. Additionally, Kobata does not disclose a remote terminal, web-based server and PACS workstation, only a client and a server.

Similarly, the combination would not teach or suggest generating a remote signal at a remote terminal in response to an error occurring at a PACS workstation connected to a web-based server, retrieving data from one or more PACS workstations in response to the remote signal, and providing remote identification and correction of an error via the web-based server at one more PACS workstations by updating software stored on one or more PACS workstations. These limitations are recited in independent claim 14. Kobata does not disclose a method for updating multiple clients based on an error detected at one client. Rather, it downloads software to one specific client or refers the client to expert consulting services based on an installation compatibility problem detected by analyzing that client's particular demographic data.

The combination would also not teach or suggest the remote analysis of log data from each of a plurality of PACS workstations in communication with a web-based server to indicate an error at the plurality of PACS workstations and remote correction of

the error at the plurality of PACS workstations from a remote terminal using the web-based server. These limitations are recited in independent claim 17. Kobata relies on demography data such as CPU power, disk space, and applications installed, not log data from a special-purpose application.

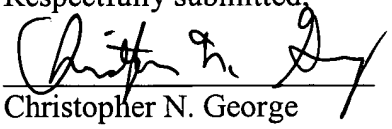
Because Zur in view of Kobata does not teach or suggest any of the limitations discussed above, let alone every limitation recited in claims 5, 14 and 17, the hypothetical combination of Zur and Kobata does not render obvious claims 5, 14 and 17, nor does it render obvious claims 6-10, 15-16 and 18, which depend from claims 5, 14 and 17, respectively.

CONCLUSION

For the foregoing reasons, claims 1-20 are distinguishable over the prior art of record. The Applicant has worked with the Examiner through requests for continued examination, telephonic interviews, and amendments to claims to reach agreement with the Examiner despite a lack of relevant prior art. The Examiner has been afforded the opportunity through multiple RCEs to search the prior art and find references which anticipate or render obvious the pending claims. The Examiner has been unable to identify any such references and has not taken Official Notice that any claimed features were well-known in the art at the time of the invention. Thus, the Applicant respectfully requests a reversal of the Examiner's rejection and issuance of a patent on the present application. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to the deposit account of GTC, Account No. 070845.

Dated: July 12, 2005

Respectfully submitted,



Christopher N. George
Registration No. 51,728
Attorney for Appellant

McAndrews, Held & Malloy, Ltd.
500 West Madison Street, 34th Floor
Chicago, IL 60661
Telephone: (312) 775-8000
Facsimile: (312) 775-8100

CLAIMS APPENDIX

The following claims are involved in this appeal:

1. A method for remotely enhancing a picture archiving and communication system, said method comprising:

establishing a network connection with a web-based server;

periodically providing software for installation to a plurality of picture archiving and communication system workstations in response to an error detected by at least one workstation;

reporting the error to the web-based server;

directing the web-based server to simultaneously install the software to the plurality of picture archiving and communication system workstations in communication with the web-based server; and

simultaneously installing software to the plurality of picture archiving and communication system workstations.

2. The method of claim 1 wherein said directing step comprises instructing the server to install at least one software update to the plurality of workstations.

3. The method of claim 1 wherein said establishing step comprises logging on to a web server and authenticating a user.

4. The method of claim 1 further comprising sending an indication message to the remote terminal to indicate whether the software installation was successful.

5. A method for remotely monitoring a picture archiving and communication system, said method comprising:

establishing a network connection with a web-based server from a remote terminal;

directing the web-based server to retrieve data from at least one file from at least one of a plurality of picture archiving and communication system workstations in

communication with the web-based server, the data including a log containing an error indicator;

retrieving the data from the at least one file;

transmitting the data to a remote terminal;

identifying an error occurring at at least one of said plurality of picture archiving and communication system workstations based on said error indicator in said data; and

updating software stored on at least one of said plurality of picture archiving and communication system workstations to correct said error.

6. The method of claim 5 wherein said retrieving step comprises extracting the at least one file for analysis at the remote terminal.

7. The method of claim 6 wherein said extracting step comprises extracting at least one log file.

8. The method of claim 6 wherein said extracting step comprises extracting at least one image file.

9. The method of claim 5 wherein said directing step comprises directing a search of files for a predetermined message in at least one of the plurality of workstations, and said retrieving step comprises retrieving files that include said predetermined message.

10. The method of claim 9 wherein said directing step comprises directing a search of files for an error indicator in at least one of the plurality of workstations, and said retrieving step comprises retrieving files that include said error indicator.

11. An apparatus for remotely enhancing a picture archiving and communication system comprising:

a remote first terminal in communication with a web-based server via an Internet connection, said remote first terminal remotely monitoring a picture archiving and

communication system workstation to generate a remote signal requesting installation of software in response to an error reported by the workstation;

a plurality of picture archiving and communication system workstations connected to said web-based server; and

said web-based server comprising an installer for simultaneously installing software to said plurality of picture archiving and communication system workstations responsive to said remote signal.

12. The apparatus of claim 11 wherein a first workstation generates the remote signal for instructing said web-based server to install software to said plurality of workstations.

13. The apparatus of claim 11 wherein said web-based server comprises an installer for simultaneously installing software updates for pre-existing software to said plurality of picture archiving and communication system workstations.

14. An apparatus for remotely monitoring a picture archiving and communication system comprising:

a remote first terminal in communication with a web-based server via a network connection, said remote first terminal comprising a remote signal generated in response to an error detected by a picture archiving and communication system workstation;

a plurality of picture archiving and communication system workstations connected to said web-based server; and

said web-based server comprising a data retriever for retrieving data from at least one of said plurality of picture archiving and communication system workstations responsive to said remote signal, said web-based server providing remote identification and correction of an error at at least one of said plurality of picture archiving and communication system workstations by updating software stored on at least one of said plurality of picture archiving and communication system workstations.

15. The apparatus of claim 14 wherein said web-based server comprises said data retriever for retrieving log files from at least one of said plurality of picture archiving and communication system workstations responsive to said remote signal.

16. The apparatus of claim 14 wherein said web-based server comprises said data retriever for retrieving image files from at least one of said plurality of picture archiving and communication system workstations responsive to said remote signal.

17. A method for remotely monitoring a picture archiving and communication system, said method comprising:

connecting to a web-based server on a network;

instructing the web-based server to extract log data from each of a plurality of picture archiving and communication system workstations in communication with the web-based server, wherein the log data indicates an error occurring at the plurality of picture archiving and communication system workstations;

transmitting the log data to a remote terminal for analysis of the error; and

remotely correcting the error at the plurality of picture archiving and communication system workstations from a remote terminal using the web-based server.

18. The method of claim 17, further comprising extracting at least one image file from at least one of the plurality of picture archiving and communication system workstations.

19. A method for remotely enhancing a picture archiving and communication system, said method comprising:

connecting to a web-based server from a remote terminal on the Internet;

instructing the web-based server to update pre-existing software on a plurality of picture archiving and communication system workstations in communication with the web-based server;

simultaneously updating said pre-existing software on the plurality of picture archiving and communication system workstations.

20. The method of claim 19, further comprising logging on to the web-based server and authenticating a user.

EVIDENCE APPENDIX

The following evidence is attached to this appendix:

1. Evidence Appendix A – Specification and Figures of Application filed on December 27, 1999.
2. Evidence Appendix B – Final Office Action mailed on September 23, 2004.
3. Evidence Appendix C – U.S. Patent Number 6,178,225 by Zur et al.
4. Evidence Appendix D – U.S. Patent Number 6,094,531 by Allison et al.
5. Evidence Appendix E – U.S. Patent Number 6,321,348 by Kobata et al.
6. Evidence Appendix F – Advisory Action mailed on January 4, 2005.

Office Actions were mailed by the Examiner on the following dates:

1. Office Action mailed on August 27, 2002.
2. Final Office Action mailed on January 24, 2003.
3. Advisory Action mailed on March 28, 2003.
4. Office Action mailed on June 23, 2003.
5. Final Office Action mailed on November 21, 2003.
6. Interview Summary mailed on January 15, 2004.
7. Advisory Action mailed on February 9, 2004.
8. Office Action mailed on April 7, 2004.
9. Final Office Action mailed on September 23, 2004.
10. Advisory Action mailed January 4, 2005.

Amendments and Responses were submitted by the Applicant on the following dates:

1. Amendment and Response mailed November 22, 2002.
2. Amendment and Response mailed on March 11, 2003.
3. Request for Continued Examination mailed on April 16, 2003.
4. Amendment and Response mailed on September 23, 2003.
5. Amendment and Response mailed on January 16, 2004.
6. Interview Summary mailed on February 12, 2004.
7. Request for Continued Examination and Amendment mailed on February 12, 2004.
8. Amendment and Response mailed on June 25, 2004.
9. Amendment and Response mailed on November 22, 2004.

TITLE

WEB-BASED APPARATUS AND METHOD FOR ENHANCING AND MONITORING PICTURE ARCHIVING AND COMMUNICATION SYSTEMS

CROSS REFERENCE TO RELATED APPLICATIONS (if applicable)

Not Applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH & DEVELOPMENT (if applicable)

Not Applicable.

BACKGROUND OF THE INVENTION

The present invention relates generally to improvements in Picture Archiving and Communication Systems ("PACS") and in particular to a web-based apparatus and method for remotely enhancing and monitoring a PACS.

Picture Archiving and Communication Systems are used for, among other things, storing, observing and analyzing images obtained in medical applications. PACS may be used with several technologies for observing the interior anatomy of a living being, for example with ultrasound, x-ray or PET images and the like. When using a Picture Archiving and Communication System, it may be desirable for several workstations at a hospital, clinic or laboratory, for example, to have access to PACS images and software to view and/or analyze the images.

Because of the rapid improvements in software for viewing and analyzing such images, it is often desirable to install or update software at each of the several workstations within a hospital. Because software bugs are also often detected after computer software is installed in the workstations, it is often necessary for an engineer to install software to "fix" or correct the bug. Such fixes or corrections are called

software patches. Unfortunately, the process of installing the software or software patches on each of the workstations within a single hospital can be very costly and time-consuming. In the past, a field engineer would have to travel to each of the workstations individually and install software or software patches (as indicated in part in Figure 1). Because each individual hospital may have 150 to 200 workstations or more, this process was very time-consuming and expensive. Moreover, the field engineer would have to be physically present at the hospital to install the software, which may take more of the engineer's time and cost even more money. Also, in some of the hospitals the computer may be present on different floors or other parts of the building which make the installation even more tedious. For example, the amount of the engineer's time taken to install software or software upgrades may be represented as:

$$\text{Time to upgrade N systems} = (T * N) + X + Y * (N - 1);$$

where T is the time to install the software, N is the number of computers to be upgraded, X is the time taken for the FE to travel to and from to the site, and Y is the average time taken for the engineer to go from one computer to another.

Additionally, errors often occur when using Picture Archiving and Communication Systems in, for example, both the software and the display of images on individual workstations. Because the person utilizing the workstation, normally a radiologist or technician, cannot analyze and determine the source of the error, a field engineer must travel to the location of the workstation to determine the source of the error. Additionally, the engineer may have to look separately at several different workstations before finding the source of the error. Such errors may often be detected by reviewing log files, i.e., files that indicate the users of a workstation and when the users logged on and off. As a result, it is very costly and time-consuming for the field engineer to trouble-shoot errors occurring at individual workstations.

Past PACS and computer technology has not presented a Picture Archiving and Communication System or method used therewith that avoids the aforementioned

problems of high cost and time consuming software installation on workstations and trouble-shooting of errors on individual PACS workstations.

A need has long existed for such a Picture Archiving and Communication System and method. A further need remains for an improved Picture Archiving and Communication System and method that enable a field engineer to remotely install software and to remotely find and correct errors in individually workstations. It is an object of the present invention to meet these and other needs.

BRIEF SUMMARY OF THE INVENTION

In an exemplary embodiment of the present invention, a method for remotely enhancing a picture archiving communication system (PACS) is provided. The method includes establishing an Internet connection with a server. The method also includes directing the server to simultaneously install software to a plurality of PACS workstations and simultaneously installing software to the plurality of PACS workstations. The method may optionally include, in the directing step, instructing the server to install at least one software update to the plurality of workstations. The method may also optionally include, in the establishing step, logging on to a web server and authenticating a user. The method may additionally optionally include sending an indication message to a remote user to indicate whether the software installation was successful.

In another exemplary embodiment of the present invention, a method for remotely monitoring a picture archiving communication system (PACS) is provided. The method includes establishing an Internet connection with a server, directing the server to retrieve data from at least one file from at least one of a plurality of PACS workstations, retrieving the data from the at least one file, and transmitting the data to a remote user.

Another alternative embodiment of the present invention provides an apparatus for remotely enhancing a picture archiving communication system including a remote first terminal in communication with a web-based server. The remote first terminal generates a remote signal. The apparatus also includes a plurality of PACS workstations connected to the web-based server, and the web-based server comprises an installer for simultaneously installing software to the plurality of PACS workstations responsive to the remote signal.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 illustrates a block diagram of a prior art picture archiving communication system (PACS).

Figure 2 illustrates a block diagram of an apparatus for remotely enhancing a picture archiving communication system according to a particular embodiment of the present invention.

Figure 3 illustrates a block diagram of an apparatus for remotely monitoring a picture archiving communication system according to an alternative embodiment of the present invention.

Figure 4 illustrates a block diagram of a method for remotely enhancing a picture archiving communication system according to another alternative embodiment of the present invention.

Figure 5 illustrates a block diagram of a method for remotely monitoring a picture archiving communication system according to yet another alternative embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Figure 2 illustrates a PACS enhancing apparatus for remotely enhancing a picture archiving communication system 200. The apparatus 200 includes a remote terminal 202, a remote signal 203, and an Internet connection 204. The apparatus 200 also includes a web-based server 206, which contains an installer 208. The web-based server 206 as shown in a preferred embodiment in Figure 2 is in communication with several workstations 210, number 1 through N in Figure 2.

Figure 3 illustrates a PACS monitoring apparatus for remotely monitoring a picture archiving communication system 300. The PACS monitoring apparatus 300 differs from the PACS enhancing apparatus 200 in that instead of an installer 208, the PACS monitoring apparatus 300 includes a data retriever 302 for retrieving data from the plurality of PACS workstations 210.

Figure 4 depicts a method for remotely enhancing a PACS 400 including an establishing step 402, a logging on step 403, a directing step 404, an installing step 406 and a sending step 408. The method corresponds to the PACS enhancing apparatus 200 of Figure 2. Figure 5 depicts a method for remotely monitoring a PACS 500 including the establishing step 402 and logging on step 403. The method 500 also includes a retrieval directing step 502, a search directing step 503, a retrieving data step 504 and an extracting step 505. The method 500 of Figure 5 further includes a transmitting step 506 and a periodic updating step 507. The monitoring method 500 corresponds to the PACS monitoring apparatus 300 of Figure 3.

Turning back to Figure 2, a user at the remote terminal 202 may connect to the web-based server 206 via an Internet connection 204. In a preferred embodiment, the user at the remote terminal 202 communicates with the web-based server 206 via an Internet connection 204 using, for example, a land-line or a cellular connection. The remote terminal 202 may include, for example, a laptop computer (preferably with a CD-ROM drive). In a preferred embodiment, the remote user may be in a different city or country from the web-based server 206 (which will normally be at the location

of the workstations 210). It is still advantageous, however, if the user is present at the site of the server 206, since the time of traveling between each of the workstations 210 will be saved, as will be further discussed below. Establishing the Internet connection corresponds to the step 402 of Figures 4 and 5.

In the typical application, the Internet communication may be over a private Internet arrangement created by, for example, a hospital. Because of the confidential nature of hospital records, the Internet connection may preferably only be made by authenticating the user using, for example, a login name and password. The process of logging on to the web server 206 and authenticating the user corresponds to the logging on and authenticating step 403 of Figures 4 and 5.

Once the Internet connection is established, the remote user may confirm that he or she is connected to the proper server and in turn able to download information to the desired workstations. At some point the remote user will make available at the remote terminal 202 software or a software patch for downloading to the workstations 210. The remote user may make the software available, for example, by placing it in a CD-ROM drive connected to the remote terminal 202.

The remote user may then instruct the web-based server 206 to install the software on one or more of the workstations 210. In the preferred embodiment, the remote user will then instruct the web-based server 206 to simultaneously install the desired software or software patch, for example, onto all of the workstations 210. The instruction may come, for example, in the form of a click with a mouse on an "install" icon on a monitor at the remote terminal 202. The installer 208 will then install the software onto each of the workstations 210. The number of workstations is generally set, for example, by the hospital or laboratory where the workstations 210 are located, and may number 150-200 or more based on need. The number of workstations 210 to which the software may be installed is not, however, limited except by the limitations of the web-based server 206 and installer 208. The instructions to install and the installation of the software correspond to the directing step 404 and simultaneous installing step 406 of Figure 4.

Once the installation is complete, the apparatus 200 may be configured such that the web-based server 206 may send a message to the remote terminal 202,

indicating whether the software installation was successful, as shown in step 408 of Figure 4.

As a result of the improved apparatus 200 and method 400, a field engineer may install software much more quickly and at considerably less expense than in the prior art method of Figure 1. First, the field engineer need not travel to the location of the workstations 210 to install the software or software updates, as was required in prior art methods. This saves both traveling time and traveling cost for the field engineer. Second, the field engineer may install the software simultaneously to several workstations, thereby saving the time necessary to travel between the several workstations (which may number between 150 and 200 or more). Third, the field engineer need not wait for the installation to be over. He or she may check later to see if the installation was successful. This also saves the time necessary for the field engineer to separately install the software onto each of the workstations 210. As a result, the field engineer may perform the installation of software onto N workstations 210 in a time equal to:

$$\text{Time to upgrade N workstations} = T + X + Y;$$

where T is the time taken to install the software, N is the number of workstations to be upgraded, X is the time it takes the remote terminal 202 to copy the file(s) to the web-based server 208 and Y is the sum of time it takes for the web-based server to push or copy the files to the desired workstations 210. As a result, Y is directly proportional to N. Once the files are pushed to the workstations 210, the installer 208 may then simultaneously install the files to the workstations 210. This is considerably less than the time taken for the field engineer to travel to each workstation individually and update the software, which as described above was:

$$\text{Time to upgrade N workstations manually} = (T * N) + X + Y * (N - 1).$$

Turning again to Figures 3 and 5, in another embodiment of the present invention, it is desirable to monitor the PACS, for example for errors or to search,

extract or download files of interest. In the embodiment of Figure 3, the web-based server 206 is provided with a data retriever 302 for retrieving data from one or more of the PACS workstations. The apparatus 300 and method 500 of Figures 3 and 5, respectively, operate in a somewhat similar way to the apparatus 200 and method 400 of Figures 2 and 4. In the remote monitoring apparatus of Figure 3, however, the web-based server 206 and data retriever 302 respond to the instructions from the remote terminal 202 by retrieving data from one or more of the plurality of PACS workstations 210.

In a preferred embodiment, the web-based server 206 and data retriever 302 respond to instructions from the remote terminal 202 to extract files form one or more of the workstations 210. Such an extraction may be desired, for example, when an error occurs at one of the workstations 210. Errors often occur in PACS workstations and may occur in image files or in the process of analyzing image files at the workstation 210. One way to detect such errors is for a field engineer to analyze a log file from the workstation 210 where the error occurs. By analyzing the log file, which tracks the desired log message when an error occurs, the engineer may determine the cause of the error and be able to correct it remotely. When an error occurs in an image file, the engineer may remotely extract the image as well, by instructing the web-based server 206 and data retriever 302 to do so. The engineer may then locate and correct the error remotely, without traveling to the location of the workstations 210. As a result, the same benefits achieved when the apparatus for remotely enhancing a PACS 200 and the method for remotely enhancing a PACS 400 may be achieved when using the apparatus 300 and method 500 for remotely monitoring a PACS.

For example, referring still to Figures 3 and 5, once the Internet connection is established with the engineer at the remote terminal 202, the engineer using the remote terminal 202 may direct the server 206 to retrieve data from a PACS workstation 210, as illustrated in step 502. This may include directing a search for a predetermined message, for example an error message, as illustrated in step 503 of Figure 5. Once the desired data is located, the server 206, in conjunction with the data retriever 302, may retrieve the data (for example a file), as indicated in steps 504 and 505. The data or file may then be transmitted to the remote terminal 202 for analysis

and, for example, to locate any errors. This process may be periodically repeated or updated as illustrated by the periodic updating step 507 of Figure 5. The process may be repeated, for example, every five or ten minutes.

Referring generally to Figures 2 through 5, the components of the remote terminal 202, web-based server 206, installer 208, workstations 210 and data retriever 302 may be implemented using combinatorial logic, an ASIC, through software implemented by a CPU, a DSP chip, or the like. Additionally, the foregoing hardware elements may be part of hardware that is used to perform other operational functions. The remote signal 203, log files, image files, installed software and software patches may be stored in registers, RAM, ROM, or the like, and may be generated through software, through a data structure located in a memory device such as RAM or ROM, and so forth.

While particular embodiments of the invention have been shown, it will be understood, of course, that the invention is not limited thereto since modifications may be made by those skilled in the art, particularly in light of the foregoing teachings. It is, therefore, contemplated that the appended claims will cover any such modifications as incorporate those features that constitute the essential features of these improvements within the true spirit and the scope of the invention.

WHAT IS CLAIMED IS:

1. A method for remotely enhancing a picture archiving communication system (PACS), said method comprising:

establishing an Internet connection with a server;

directing the server to simultaneously install software to a plurality of PACS workstations in communication with the server; and

simultaneously installing software to the plurality of PACS workstations.

2. The method of claim 1 wherein said directing step comprises instructing the server to install at least one software update to the plurality of workstations.

3. The method of claim 1 wherein said establishing step comprises logging on to a web server and authenticating a user.

4. The method of claim 1 further comprising sending an indication message to the remote terminal to indicate whether the software installation was successful.

5. A method for remotely monitoring a picture archiving communication system (PACS), said method comprising:

establishing an Internet connection with a server;

directing the server to retrieve data from at least one file from at least one of a plurality of PACS workstations in communication with the server;

retrieving the data from the at least one file; and

transmitting the data to a remote terminal.

6. The method of claim 5 wherein said retrieving step comprises extracting the at least one file for analysis at the remote terminal.

7. The method of claim 6 wherein said extracting step comprises extracting at least one log file.

8. The method of claim 6 wherein said extracting step comprises extracting at least one image file.

9. The method of claim 5 wherein said directing step comprises directing a search of files for a predetermined message in at least one of the plurality of workstations.

10. The method of claim 9 wherein said directing step comprises directing a search of files for an error indicator in at least one of the plurality of workstations.

11. An apparatus for remotely enhancing a picture archiving communication system comprising:

a remote first terminal in communication with a web-based server via an Internet connection, said remote first terminal comprising a remote signal;

a plurality of PACS workstations connected to said web-based server; and

said web-based server comprising an installer for simultaneously installing software to said plurality of PACS workstations responsive to said remote signal.

12. The apparatus of claim 11 wherein said first workstation comprises the remote signal for instructing said web-based server to install software to said plurality of second workstations.

13. The apparatus of claim 11 wherein said web-based server comprises an installer for simultaneously installing software updates for pre-existing software to said plurality of PACS workstations.

14. An apparatus for remotely monitoring a picture archiving communication system comprising:

a remote first terminal in communication with a web-based server via an Internet connection, said remote first terminal comprising a remote signal;

a plurality of PACS workstations connected to said web-based server; and

said web-based server comprising a data retriever for retrieving data from at least one of said plurality of PACS workstations responsive to said remote signal.

15. The apparatus of claim 14 wherein said web-based server comprises said data retriever for retrieving log files from at least one of said plurality of PACS workstations responsive to said remote signal.

16. The apparatus of claim 14 wherein said web-based server comprises said data retriever for retrieving image files from at least one of said plurality of PACS workstations responsive to said remote signal.

WEB-BASED APPARATUS AND METHOD FOR ENHANCING AND MONITORING PICTURE ARCHIVING AND COMMUNICATION SYSTEMS

ABSTRACT OF THE DISCLOSURE

A method for remotely enhancing a picture archiving communication system (PACS) is provided. The method includes establishing an Internet connection with a server. The method also includes directing the server to simultaneously install software to a plurality of PACS workstations and simultaneously installing software to the plurality of PACS workstations. The method may optionally include, in the directing step, instructing the server to install at least one software update to the plurality of workstations. The method may also optionally include, in the establishing step, logging on to a web server and authenticating a user, and sending an indication message to a remote user to indicate whether the software installation was successful. An alternative embodiment provides an apparatus for remotely enhancing a picture archiving communication system. In another exemplary embodiment of the invention, a method for remotely monitoring a picture archiving communication system (PACS) is provided. The method includes establishing an Internet connection with a server, directing the server to retrieve data from at least one file from at least one of a plurality of PACS workstations, retrieving the data from the at least one file, and transmitting the data to a remote user. Yet another alternative embodiment provides an apparatus for remotely monitoring a picture archiving communication system.

OIPE JC131
JUL 12 2005
PATENT & TRADEMARK OFFICE

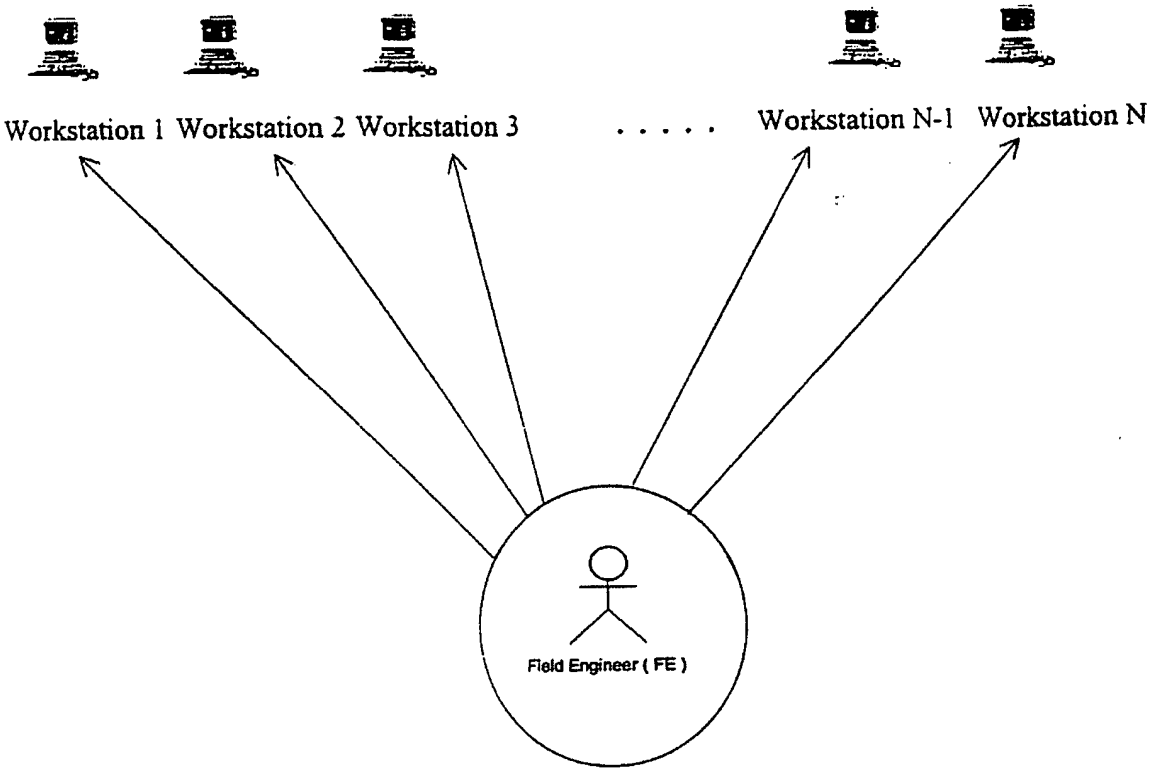


Figure 1
(Prior Art)

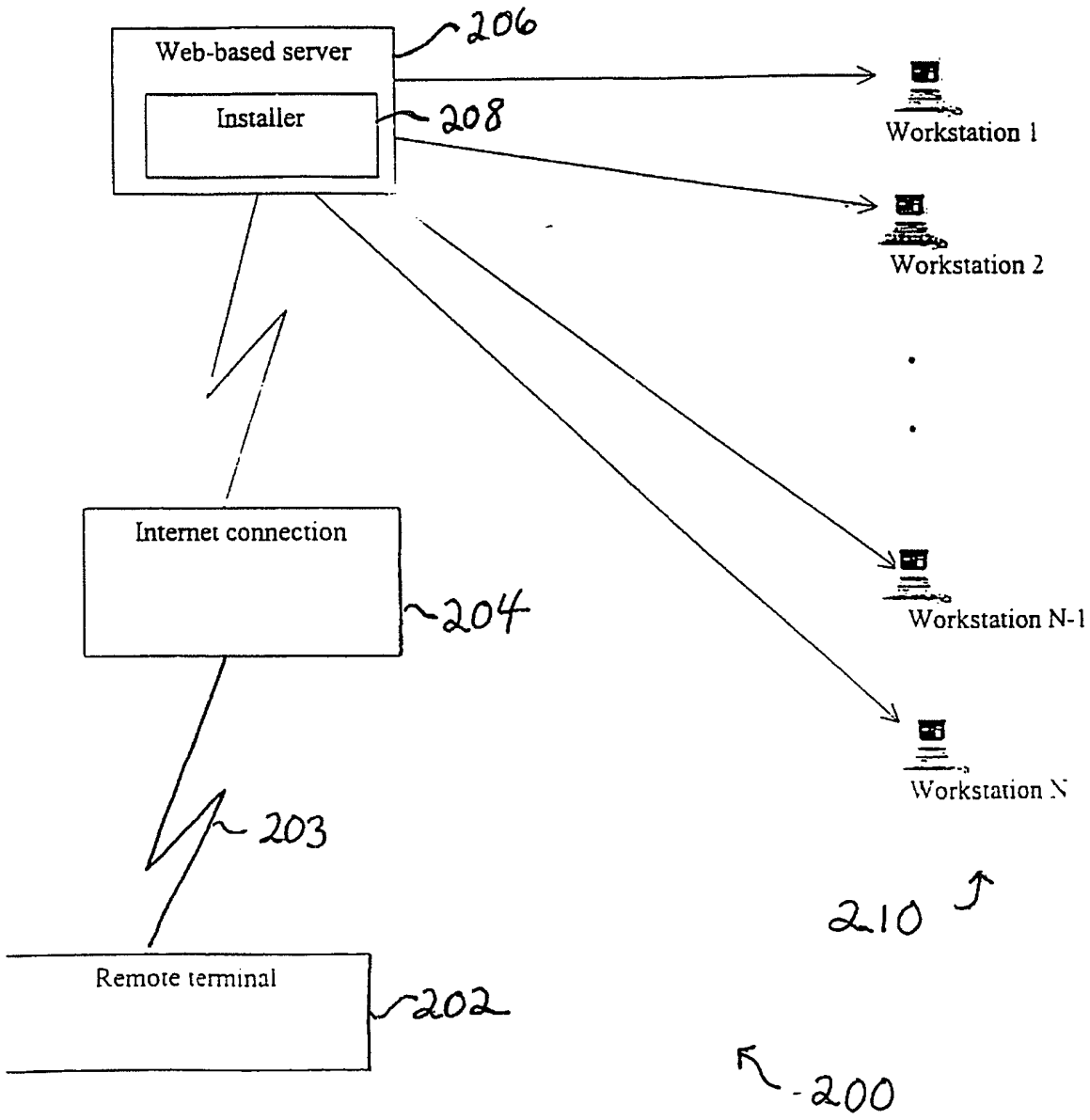

Web-based server
206
Installer
208
Workstation 1
Workstation 2
Workstation N-1
Workstation N
Internet connection
204
203
Remote terminal
202
210
200

Figure 2

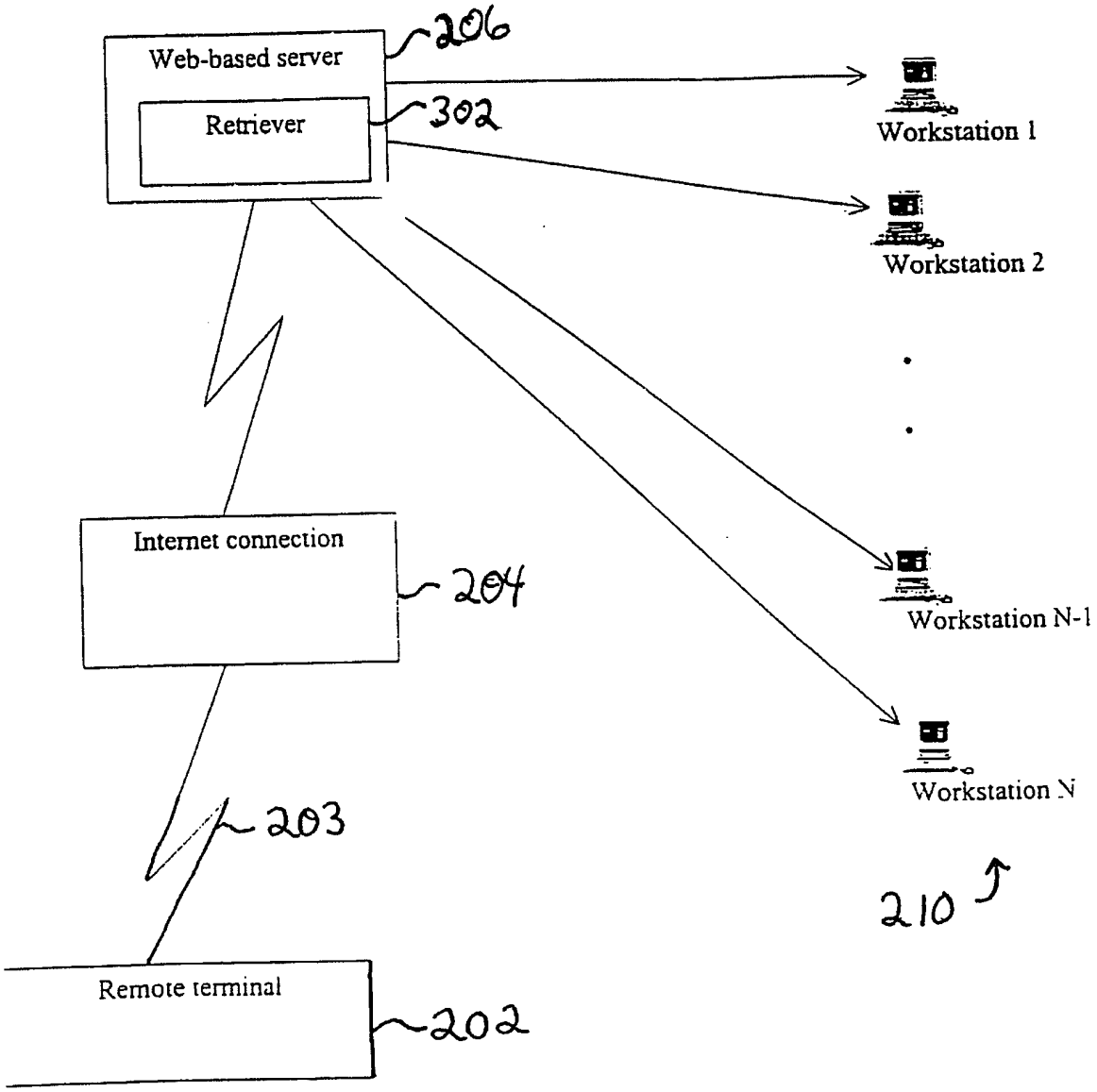

Web-based server
206
Retriever
302
Workstation 1
Workstation 2
Workstation N-1
Workstation N
210
Internet connection
204
203
Remote terminal
202

Figure 3

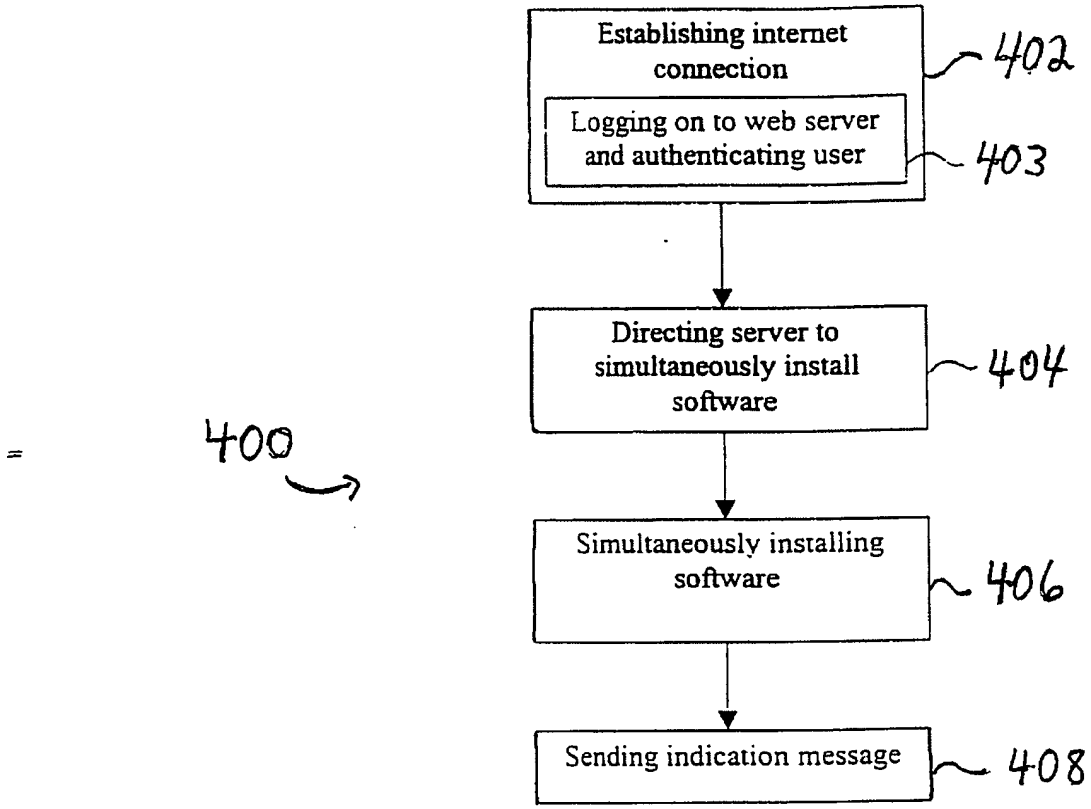

400
Establishing internet connection
402
Logging on to web server and authenticating user
403
Directing server to simultaneously install software
404
Simultaneously installing software
406
Sending indication message
408

Figure 4

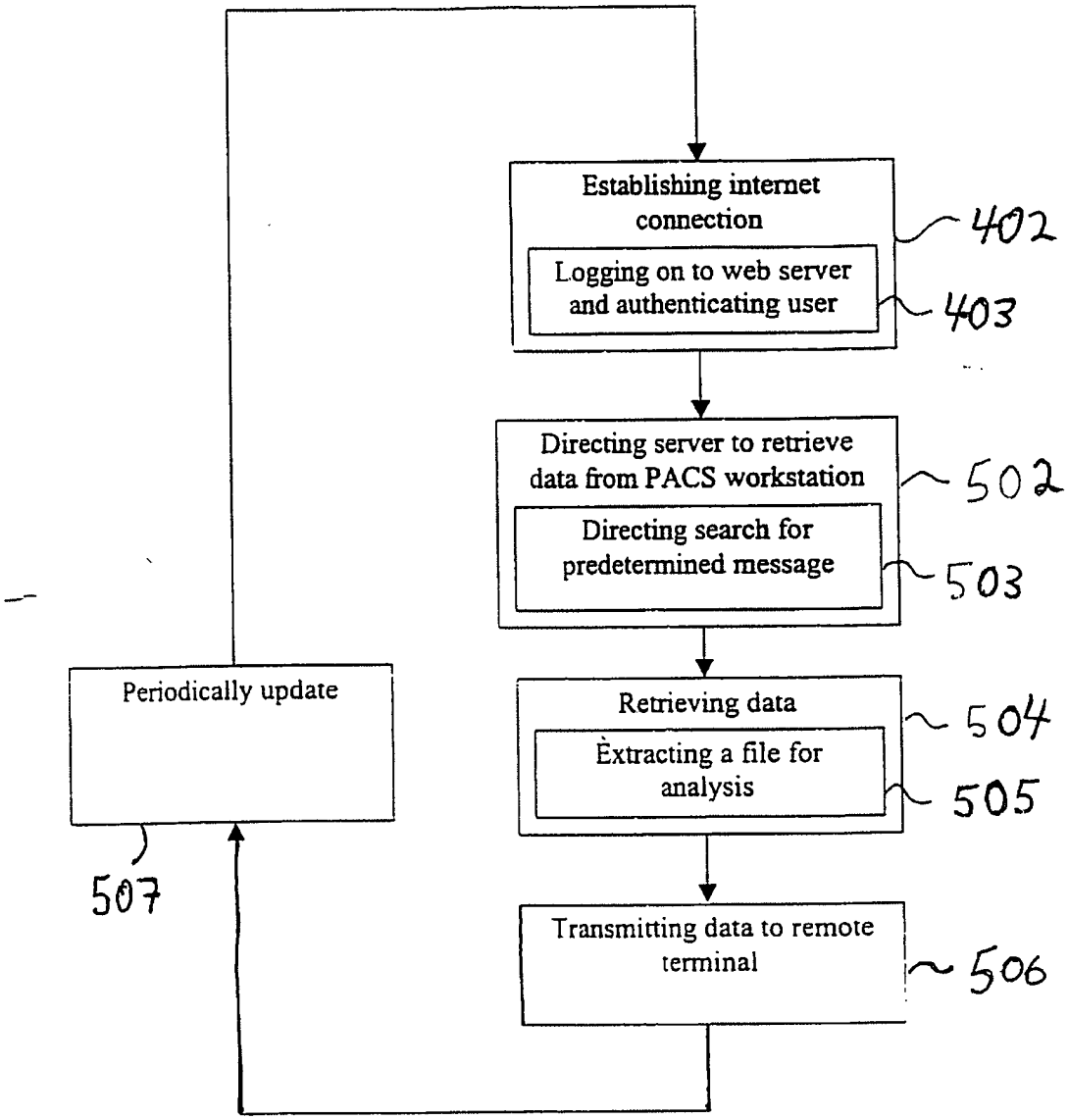

Establishing internet connection
402
Logging on to web server and authenticating user
403
Directing server to retrieve data from PACS workstation
502
Directing search for predetermined message
503
Retrieving data
504
Extracting a file for analysis
505
Transmitting data to remote terminal
506
Periodically update
507

Figure 5

OIPE JC 1/97
JUL 12 2005
PATENT & TRADEMARK OFFICE

12-5298 US01

WWW
CNG
CB

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09/472,290	12/27/1999	MAQBOOL PATEL	15-IS-5298	8556

7590 09/23/2004

SCOTT P MCBRIDE
MCANDREWS HELD & MALLOY LTD
34TH FLOOR
500 W MADISON STREET
CHICAGO, IL 60661

RECEIVED
SEP 27 2004
McANDREWS, HELD & MALLOY

EXAMINER	
STEELMAN, MARY J	

ART UNIT	PAPER NUMBER
2122	

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

RESPONSE DUE:
Nov 23, 2004
Amendment

RESPONSE DUE:
Dec 23, 2004
Ntc of Appeal

OIPE JC 1 4
JUL 1 2 2005
PATENT & TRADEMARK OFFICE

Office Action Summary	Application No.	Applicant(s)	
	09/472,290	PATEL ET AL.	
	Examiner	Art Unit	
	Mary J. Steelman	2122	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1 136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U S C § 133) Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment See 37 CFR 1 704(b)

Status

1)☒ Responsive to communication(s) filed on *25 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U S C § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to Amendment filed 25 June 2004.

2. As per Applicant's request, claims 1, 5, 9, 10, 11, and 14 have been amended. Claims 1-20 are pending.

Claim Objections

3. Claim 11 is objected to as having an incorrect deletion. "detected" is deleted in the currently amended claim. However, "detected" was not previously used in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1-4, 11-13, and 19- 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,178,225 to Zur et al, in view of U. S. Patent 6,094,531 to Allison et al., in further view of US Patent 6,321,348 B1 to Kobata.

Zur teaches a system for management of multiple imaging services within a networked system (Zur, Fig. 1) which could be part of a (Zur, col. 4, line 38) Picture Archiving and Communication System (PACS). The imaging facility has (Zur, col. 4, lines 53-54) "internet

connectivity...via a network connection." (establishing a network connection with a web-based server) where signals are communicated between the service center (server) and the metering systems, SYS1-N, (plurality of clients). Zur does not teach a method to simultaneously install software to a plurality of PACS workstations. However, Allison does teach a method for automatic simultaneous installation on a plurality of machines (terminal / workstations / clients). (Allison, fig. 1 and col. 4, lines 43-48) "The installer (1) of the present invention is capable of configuring several machines (3) and installing operating systems (periodically providing software for installation) on them...simultaneously...over network...Internet." The server is directed to install: (Allison, col. 11, line 45), "When the installer (1) receives a request from a dispatcher (17) to install..." and the (Allison, col. 11, lines 61-65) "...installer (1) calls the installation script...The script then causes the OS to be installed on the selected test machine..." Besides installing operating systems, other software may be installed (updates), (col. 12, line 32) "...the launcher (18) installs the test software..."

Regarding claim 1, Zur disclosed:

-establishing a network connection with a web-based server; (Zur, fig. 1, "network connection" and col. 2, line 51, "...communicate via an Internet communication technology...".)

-a plurality of picture archiving and communication system workstation. (Zur, col. 4, lines 37-38, Picture Archiving and Communication System (PACS).")

Zur failed to provide details on simultaneous installations of software on the remote workstations. However Allison disclosed:

-providing software for installation; (Allison, col. 5, lines 42-43, "...installer is provided with the name of the ...revision (software) to be installed.")

-directing the web-based server to simultaneously install the software to a plurality of picture archiving and communication system workstations in communication with the web-based server; (Allison, Col. 4, lines 43-46, "The installer...is capable of...installing...simultaneously.")

-simultaneously installing software to the plurality of picture archiving and communication system workstations. (Allison, col. 4, lines 43-46.)

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the networked Picture Archiving Communication System units as taught by Zur, by permitting the networked system to allow for simultaneous installations of software to the PACS workstations, as taught by Allison, because PACS is a cost effective solution to image processing, PACS is already networked, and (Allison, col. 1, lines 14-41) disclosed methods that make it suitable for simultaneous generic installation on a plurality of networked computers (workstations/ terminals) while minimizing human intervention and the likelihood of errors.

Neither Zur, nor Allison discloses "in response to an error detected by at least one workstation"... "reporting the error to the web-based server".

However, Kobata disclosed a client / server Internet based application with a (Abstract, lines 1-10) system provided to detect the infrastructure at the client side...to automatically transmit required software to the client ...to remotely identify problems (detect errors)...to install new software..." Kobata disclosed (col. 2, lines 42-51), "...infrastructure data is sensed at

the client side and reported to the server periodically (reporting the error to the web-based server)...The artificial intelligence system at the server side can filter the incoming data so as to be able to ascertain what problems, if any exist...to provide corrective action through the automatic transmission of new software over the Internet to the client."

Therefore, it would have been obvious to one of ordinary skill in the art, to have modified Zur's Picture Archiving Communication workstation environment to include the simultaneous installation as provided by Allison, and further to provide that the update installation in response to an error condition being remotely identified, as disclosed by Kobata. This is well known in the art. Monitoring remote workstations for error corrections and correcting remotely is an efficient use of resources.

Regarding claim 2:

Zur teaches a system for management of multiple imaging services within a networked system (Zur, Fig. 1) which could be part of a (Zur, col. 4, line 38) Picture Archiving and Communication System (PACS). The imaging facility has (Zur, col. 4, lines 53-54) "internet connectivity...via a network connection." where signals are communicated between the service center (server) and the metering systems, SYS1-N, (plurality of clients). Zur does not teach a method to simultaneously install software to a plurality of PACS workstations. However, Allison does teach a method for automatic simultaneous installation on a plurality of machines (terminal / workstations / clients). Allison disclosed:

-instructing the server to install at least one software update to the plurality of workstations.

(Allison, col. 12, lines 32-34, "...the launcher (18) installs the test software, configures the environment...and starts the test software.")

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Zur's networked Picture Archiving Communication System with software updates, as disclosed by Allison, because a server installation process minimizes human intervention, reducing costs and errors.

Regarding claim 3:

Zur teaches a system for management of multiple imaging services within a networked system (Zur, Fig. 1) which could be part of a (Zur, col. 4, line 38) Picture Archiving and Communication System (PACS). The imaging facility has (Zur, col. 4, lines 53-54) "internet connectivity...via a network connection." where signals are communicated between the service center (server) and the metering systems, SYS1-N, (plurality of clients). Zur does not teach a method to simultaneously install software to a plurality of PACS workstations. However, Allison does teach a method for automatic simultaneous installation on a plurality of machines (terminal / workstations / clients). Allison disclosed:

-logging on to a web server and authenticating a user. (Allison, col. 8, lines 8-9, "components...and the users...communicate via the Internet." Also col. 11, lines 33-36, "...each installer contains a list of the dispatchers with which it can communicate. Each installer will also contain a list of the test machines which it is allowed to configure and/or install.")

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Zur's networked Picture Archiving Communication System with log-

ons and authentication, as disclosed by Allison, because this is a well known technique to verify permissions to networked clients.

Regarding claim 4:

Zur teaches a system for management of multiple imaging services within a networked system (Zur, Fig. 1) which could be part of a (Zur, col. 4, line 38) Picture Archiving and Communication System (PACS). The imaging facility has (Zur, col. 4, lines 53-54) "internet connectivity...via a network connection." where signals are communicated between the service center (server) and the metering systems, SYS1-N, (plurality of clients). Zur does not teach a method to simultaneously install software to a plurality of PACS workstations. However, Allison does teach a method for automatic simultaneous installation on a plurality of machines (terminal / workstations / clients). Allison disclosed:

-sending an indication message to the remote terminal to indicate whether the software installation was successful. (Allison, col. 4, lines 12 – 15, "When the launcher program is installed, the launcher program will notify all of the dispatcher machines with which it is allowed to communicate that the test machine is on the system.")

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Zur's networked Picture Archiving Communication System with a successful install message, as disclosed by Allison, because this is a well known verification technique.

Regarding claim 11:

Zur disclosed:

-a remote first terminal in communication with a web-based server via an Internet connection, said remote first terminal remotely monitoring a picture archiving and communication system workstation (Zur: Col. 2, lines 49-54, "system may communicate with the service center vial an Internet communication technology...communicates with the service center by electronic polling (remote monitoring)."

Zur fails to teach, " to generate a remote signal requesting installation of software in response to an error reported by the workstation". However Kobata disclosed monitoring remote clients to detect error conditions. Kobata disclosed (col. 2, lines 42-44) "infrastructure data is sensed at the client side and reported to the server...". Kobata, col. 2, lines 36-37, "information is analyzed and appropriate corrective measures are transmitted back to the client."

Zur disclosed:

-a plurality of picture archiving and communication system workstations connected to said web-based server; (Zur, fig. 1, #SYS-1-N, & col. 4, lines 37-38, "...may be part of a Picture Archiving and Communication System...")

Zur teaches a networked PACS apparatus, but fails to disclose simultaneous installation of software. However, Allison disclosed the feature of a simultaneous installation:

-said web-based server comprising an installer for simultaneously installing software to said plurality of picture archiving and communication system workstations responsive to said remote signal. (Allison: Col. 4, lines 43-46, "...installing...simultaneously...")

Therefore, it would have been obvious to one of ordinary skill in the art, to have modified Zur's Picture Archiving Communication workstation environment to include the simultaneous

installation as provided by Allison, and further to provide that the update installation in response to an error condition reported by the client (workstation), as disclosed by Kobata. This is well known in the art. Monitoring remote workstations for error conditions, reporting such data, and correcting remotely is an efficient use of resources.

Regarding claim 12:

Zur teaches a networked PACS apparatus, but fails to disclose details regarding the installation of software, "first workstation generates the remote signal for instructing said web-based server to install software to said plurality of workstations." Kobata disclosed a client generating signals to a server (col. 2, lines 39-40) "transmission back to the server of ...demography (error indicators)." – which lead to the server delivering updated software. Allison disclosed a simultaneous update to clients (col. 4, lines 45-46).

Therefore, it would have been obvious to one of ordinary skill in the art, to have modified Zur's Picture Archiving Communication workstation environment to include the simultaneous installation as provided by Allison, and further to provide that the update installation in response to an error condition detected, as disclosed by Kobata. This is well known in the art. Monitoring remote workstations for error corrections and correcting remotely is an efficient use of resources.

Regarding claim 13:

-web-based server comprises an installer for simultaneously installing software updates for pre-existing software to said plurality of picture archiving and communication system workstations.

Zur teaches networked PACS apparatus. Zur fails to teach simultaneous installation. Allison teaches simultaneous installation and installs operating systems (software updates) according to test requirements. Allison: col. 11, lines 45 – 67, "...the installer receives a request from a dispatcher to configure or install..., the installer will send commands over the Internet...the command is received...installer and the test machine will communicate back and forth...The script then causes the OS (software) to be installed on the selected test machine..." Neither Zur, nor Allison specifically teach updating pre-existing software, however, Kobata disclosed (col. 2, lines 7-10), "...ascertain the particular problem, new software can be automatically downloaded to the client to fix the client's problem (update)..."

Therefore, it would have been obvious to one of ordinary skill in the art, to have modified Zur's Picture Archiving Communication workstation environment to include the simultaneous installation as provided by Allison, and further to provide an update installation in response to an error condition detected, as disclosed by Kobata. This is well known in the art. Monitoring remote workstations for error corrections and correcting remotely is an efficient use of resources.

Regarding claim 19:

Zur disclosed:

-connecting to a web-based server from a remote terminal on the Internet; (Zur, col. 2, lines 50-51, "the metering system may communicate with the service center via an Internet communication technology...".)

Zur teaches a system for management of multiple imaging services within a networked system which could be part of a Picture Archiving and Communication System (PACS). The

imaging facility has "internet connectivity...via a network connection." where signals are communicated between the service center (server) and the metering systems, SYS1-N, (plurality of clients). Zur does not teach a method to simultaneously install software to a plurality of PACS workstations. However, Allison does teach a method for automatic simultaneous installation on a plurality of machines (terminal / workstations / clients). Allison does not specify that the software installation could be an update to pre-existing software. However, Kobata disclosed an Internet based client / server application that detects errors at the client terminals and applies software updates to provide corrections. Kobata disclosed:
-instructing the web-based server to update pre-existing software on a plurality of picture archiving and communication system workstations in communication with the web-based server; (Kobata, col. 2, lines 8-9, "new software can be automatically downloaded to the client to fix the client's problem...")

Therefore, it would have been obvious to one of ordinary skill in the art, to have modified Zur's Picture Archiving Communication workstation environment to include the simultaneous installation as provided by Allison, and further to provide an update installation to pre-existing software, in response to a detected error, as disclosed by Kobata, because updating software is an efficient use of resources, while keeping applications correct.

Zur teaches a system for management of multiple imaging services within a networked system which could be part of a Picture Archiving and Communication System (PACS). The imaging facility has "internet connectivity...via a network connection." where signals are communicated between the service center (server) and the metering systems, SYS1-N, (plurality of clients). Zur does not teach a method to simultaneously install software to a plurality of

PACS workstations. However, Allison does teach a method for automatic simultaneous installation on a plurality of machines (terminal / workstations / clients). Allison disclosed: -simultaneously updating said pre-existing software on the plurality of picture archiving and communication system workstations. (Allison, col. 4, lines 43-46, "...installer...is capable of ...installing...simultaneously.")

Therefore, it would have been obvious to one of ordinary skill in the art, to have modified Zur's Picture Archiving Communication workstation environment to include the simultaneous installation as provided by Allison, and further to provide that the update installation to pre-existing software, as disclosed by Kobata. This is well known in the art. Monitoring remote workstations for error corrections and correcting remotely is an efficient use of resources.

Regarding claim 20:

Zur disclosed:

-logging on to the web-based server and authenticating a user. (Zur, col. 6, lines 45-46, "...may necessitate...password or code.")

6. **Claims 5-10 and 14-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,178,225 to Zur et al, in view of US Patent 6,321,348 B1 to Kobata.

Zur teaches a system for management of multiple imaging services within a networked system (Zur, Fig. 1) which could be part of a (Zur, col. 4, line 38) Picture Archiving and Communication System (PACS). The imaging facility has (Zur, col. 4, lines 53-54) "internet

connectivity...via a network connection." where signals are communicated between the service center (server) and the metering systems, SYS1-N, (plurality of clients). Zur does not teach identifying an error occurring on the workstations based on said error indicator and updating software stored on the workstations to correct said error. However, Kobata does teach error detection and software updates.

Regarding claim 5:

Zur disclosed:

-establishing a network connection with a web-based server; from a remote terminal;

(Zur, col. 2, lines 50-51, "...communicate with the service center via an Internet communication technology...")

-directing the web-based server to retrieve data from at least one file from at least one of a plurality of picture archiving and communication system workstations in communication with the web-based server, the data including a log containing an error indicator;

(Zur, fig. 3 and col. 1, lines 59-61, "...t he method for management of X-ray imaging...includes an archiving step wherein a generated...image is retrievably stored..." and col. 2, lines 15-24, "...method for management...includes...preparing a statistical report (log)...statistical report may include periodic data ...or other data considered relevant to the service center...")

-retrieving the data from the at least one file; (Zur, col. 5, lines 61-62, "...images are forwarded to an archive for storage and subsequent retrieval...)

-transmitting the data to a remote terminal; (Zur, col. 1, lines 63-64, "...archiving step includes transferring the generated digital image to a remote archive.")

Zur failed to disclose information regarding error detection / correction. However, Kobata disclosed:

-log containing an error indicator; (See Kobata, col. 3, lines 50-59, for examples of types of log error indicators sent from the client to the server.)

-identifying an error occurring at at least one of said plurality of picture archiving and communication system workstations based on said error indicator in said data; (Kobata: col. 4, lines 5-10, "expert system...can remotely identify problems...remotely identify solutions...")

-updating software stored on at least one of said plurality of picture archiving and communication system workstations to correct said error. (Kobata: col. 4, lines 5-10, "expert system...can ...remotely fix problems...remotely install software...")

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to have modified Zur's Picture Archiving Communication system to accommodate error detection / correction, as disclosed by Kobata because these features make a networked system more adaptable, by handling problems / creating solutions in an automatic manner. Remote error detection / correction in networked systems is well known in the art.

Regarding claim 6:

Zur disclosed:

- extracting the at least one file for analysis at the remote terminal. (Zur, col. 4, lines 34-37, "After the technologist has viewed the image (file), the image may be exported from operating

and viewing station and stored at a local archive where it is retrieved (extracting) for diagnostics.")

Regarding claim 7:

Zur provided a PACs environment. Zur disclosed the collection of a client statistical report (col. 2, lines 13-24). Zur failed to provide detailed information regarding the client log file. However, Kobata disclosed a client log file that is analyzed to identify problems (col. 4, line 6). Kobata disclosed:

-extracting at least one log file. (Kobata: Col. 3, lines 50-62, "Referring now to FIG. 2, the infrastructure data (log file) which is analyzable from the client is shown to include...Having this type of information at the server side permits either an expert or artificial intelligence analysis of a particular client's PC..."

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to have modified Zur's Picture Archiving Communication system to accommodate error detection / correction through the use of a log file, as disclosed by Kobata because these features make a networked system more adaptable, by handling problems / creating solutions in an automatic manner. Remote error detection / correction in networked systems is well known in the art.

Regarding claim 8:

Zur disclosed:

-extracting at least one image file. (Zur, col. 4, lines 34-37, "After the technologist has viewed the image (image file), the image may be exported from operating and viewing station and stored at a local archive where it is retrieved (extracting) for diagnostics.")

Regarding claim 9:

Zur provided a PACs environment. Zur disclosed the collection of a client statistical report (col. 2, lines 13-24). Zur failed to provide detailed information regarding the client log file. However, Kobata disclosed a client log file that is analyzed to identify problems (col. 4, line 6 and col. 3, lines 50-59). Kobata disclosed:

-directing a search of files for a predetermined message in at least one of the plurality of workstations and said retrieving step comprises retrieving files that include said predetermined message.

(Kobata: col. 3, line 50 – col. 4, line 10, "...infrastructure data which is analyzable from the client...to include such things as IP address (predetermined message), CPU information (predetermined message), hard disk space (predetermined message), network connection (predetermined message), a list of inventories or application (predetermined message), peripherals such as sound cards and the log-in history. Also, that which is available is the serial number of the software (predetermined message) which has been provided to the client which provides a unique ID (predetermined message) of the client software, the provider's ID, the date delivered and route of delivery...server side permits...analysis..." Data (files retrieved with predetermined messages) is sent by the client to a server. See col. 2, lines 34-37, "...provide this information to an artificial intelligence or expert type consulting system in which the information

is analyzed and appropriate corrective measures are transmitted back to the client." The data retrieved by the server is analyzed for error conditions, whereby corrective action is provided (col. 2, lines 50-51) "through the automatic transmission of new software over the internet to the client.")

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to have modified Zur's Picture Archiving Communication system to accommodate error detection / correction through retrieving a predetermined message from remote workstations / clients, as disclosed by Kobata because these features make a networked system more adaptable, by handling problems / creating solutions in an automatic manner. Remote error detection / correction in networked systems is well known in the art.

Regarding claim 10:

Zur provided a PACs environment. Zur disclosed the collection of a client statistical report (col. 2, lines 13-24). Zur failed to provide detailed information regarding the collection of data indicating errors from a client. However, Kobata disclosed more details regarding detecting errors at a client. Kobata disclosed:

-directing a search of files for an error indicator in at least one of the plurality of workstations, and said retrieving step comprises retrieving files that include said error indicator.

(Kobata: Col. 3, lines 50-59 – files that include said error indicator- Col. 3, lines 60-063, "server side permits...analysis (directing a search of files for error indicator) of a particular client's PC.")

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to have modified Zur's Picture Archiving Communication system to search files for an error indicator as disclosed by Kobata because these features make a networked system more adaptable, by handling problems / creating solutions in an automatic manner. Remote error detection / correction in networked systems is well known in the art.

Regarding claim 14:

Zur disclosed:

-a remote first terminal in communication with a web-based server via a network connection, said remote first terminal comprising a remote signal; (Zur, fig. 1. & 3, col. 2, lines 47-55; "...metering system (first terminal, SYS-1) is operative to communicate with the service center (web-based server) via a communications network...by electronic polling (remote signal.)

-a plurality of picture archiving and communication system workstations connected to said web-based server; (Zur, figs. 1 & 3, SYS1-N, col. 3, line 27, "...at least one digital X-ray imaging facility (10)." Also col. 4, lines 53-54, "...imaging facility has internet connectivity...via a network connection.")

-said web-based server comprising a data retriever for retrieving data from at least one of said plurality of picture archiving and communication system workstations responsive to said remote signal. (Zur, col. 5, lines 61-62, "...images are forwarded to an archive for storage and subsequent retrieval..." and col. 6, lines 43-45, "service center (server) may electronically poll individual...imaging facilities to...update...statistics.")

Zur failed to disclose a signal generated in response to an error and providing remote identification and correction of an error. However, Kobata disclosed:

-remote signal generated in response to an error detected by a picture archiving and communication system workstation...

(Kobata: col. 2, lines 42-44, "infrastructure data is sensed (detect error signal) at the client side and reported to the server periodically...."

-server providing remote identification and correction of an error at at least one...workstation by updating software stored on at least one...workstation. (Kobata: col. 2, lines 8-10, "...ascertain the particular problem, new software can be automatically downloaded to the client...")

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to have modified Zur's Picture Archiving Communication system to provide an error indicator and update correction, as disclosed by Kobata because these features make a networked system more adaptable, by handling problems / creating solutions in an automatic manner. Remote error detection / correction in networked systems is well known in the art.

Regarding claim 15:

Zur provided a PACs environment. Zur disclosed the collection of a client statistical report (col. 2, lines 13-24). Zur failed to provide detailed information regarding the client log file. However, Kobata disclosed a client log file that is analyzed to identify problems (col. 4, line 6). Kobata disclosed:

-said web-based server comprises said data retriever for retrieving log files from at least one of said plurality of picture archiving and communication system workstations responsive to said

remote signal. (Kobata: Col. 2, lines 31-34, "system detects the demographics of a client including...applications installed, network connectivity and log-in history (retrieving log files) so as to provide this information to an artificial intelligence or expert type consulting system (at the server)...")

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to have modified Zur's Picture Archiving Communication system to accommodate the retrieval of log files for the purpose error detection / correction, as disclosed by Kobata because these features make a networked system more automatic and adaptable, by handling problems / creating solutions in an automatic manner. Remote error detection / correction in networked systems is well known in the art.

Regarding claim 16:

Zur disclosed:

-data retriever for retrieving image files from at least one of said plurality of PACS workstations responsive to said remote signal. (Zur, col. 4, lines 34-37, "After the technologist has viewed the image (image file), the image may be exported from operating and viewing station and stored at a local archive where it is retrieved (extracting) for diagnostics.")

Regarding claim 17:

Zur disclosed:

-connecting to a web-based server on a network; (Zur, col. 2, lines 50-51, "...communicate with the service center via an Internet communication technology...")

Zur provided a PACs environment. Zur disclosed the collection of a client statistical report (col. 2, lines 13-24). Zur failed to provide detailed information regarding the client log file and analysis. However, Kobata disclosed a client log file that is analyzed to identify problems (col. 4, line 6). Kobata disclosed:

-instructing the web-based server to extract log data from each of a plurality of picture archiving and communication system workstations in communication with the web-based server; (Kobata: Col. 4, lines 11-13, "The database information of the infrastructure (analyzable data from clients) of all the clients can also be used by the consultant group to remotely identify potential customers..." Also, lines 15-17, "The system can not only identify a particular client's problems,..." The system extracts information sent from the client to the server, which may indicate error conditions.

-transmitting the log data to a remote terminal for analysis of the error; (Kobata: col. 3, lines 60-62, "server side permits either an expert or artificial intelligence analysis of a particular client's PC (workstation)")

-remotely correcting the error at the...workstations from a remote terminal using the web-based server. (Kobata: Col. 4, line 29, "...remotely fixing the problems...")

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to have modified Zur's Picture Archiving Communication system to accommodate the retrieval of client workstation data for the purpose error detection / correction, as disclosed by Kobata because these features make a networked system more automatic and adaptable, by handling problems / creating solutions in an automatic manner. Remote error detection / correction in networked systems is well known in the art.

Regarding claim 18:

Zur disclosed:

-extracting at least one image file from at least one of the plurality of picture archiving and communication system workstations. (Zur, col. 4, lines 34-37, "After the technologist has viewed the image (image file), the image may be exported from operating and viewing station and stored at a local archive where it is retrieved (extracting) for diagnostics.")

Response to Arguments

7. Applicant's argument's filed on 22 November 2002 have been fully considered but they are not persuasive.

8. Applicant has argued, in substance, the following:

(A) As Applicant has noted on page 11, 1st paragraph of Amendment dated 25 June 2004, "One of ordinary skill in the art would not have combined the teachings of Zur, Allison, and Kobata in pursuit of the claimed invention."

Examiner's Response:

Zur (col. 1, lines 6-8) "relates to systems and methods for **management** of X-ray imaging facilities **and services**, specifically digital X-ray imaging facilities...(col. 1, lines 44-45) services **including the steps of installing**..." (emphasis added)

There is motivation to install software (specifically picture archiving system) simultaneously on networked computers by combining the references of Zur and Allison, as Zur shows networked workstations running picture archiving software. A simultaneous install is a cost and time efficient method of managing networks. Zur does mention that system costs are a consideration (col. 1, lines 33-34).

Allison provides for an automatic, simultaneous installation of software on a plurality of clients. Allison noted (col. 1, lines 41-45) "the need exists for a method and apparatus for automatically installing...which does not require human involvement and which is capable of automatically installing...on large numbers of computers."

Kobata disclosed (col. 1, lines 11-14), "This invention relates to the provision of data over the Internet...to provide appropriate software...based on the user's infrastructure data." Kobata noted (col. 1, line 43) "installation problems" which occur most frequently..." Extracting / analyzing data for error conditions, and as such the Kobata reference provides these features and reduces installation problems.

Thus all references relate to installing software over the Internet. Management and services are provided to automatically install. Time and cost efficiency considerations and reduced installation problems are provided.

(B) As Applicant has noted on page 11, 3rd paragraph through page 12, 1st paragraph, regarding independent claim 1, the combined art does not teach "a method for remotely enhancing a picture archiving and communication system (PACS) including establishing a network connection with a web-based server and periodically providing software for installation to a plurality of PACS

workstations in response to an error detected at one or more of the workstations"... "directing the web-based server to simultaneously install the software to the plurality of PACS workstations and simultaneously installing the software."

Examiner's Response:

See response to claim 1 above.

Simultaneous installation is taught by the combination of Zur (picture archiving communication system), networked (see Zur, fig. 1, items 16, 21, and sys-1 – sys-n.) as modified by a generic simultaneous install system as taught by Allison. It would have been obvious to use a simultaneous installation on a specific system (workstations using picture archiving software.) The Kobata reference provides the features of software updates, log files and error detection / correction.

(C) As Applicant has noted on page 12, 3rd paragraph, regarding independent claim 11, the combined art does not teach or suggest "a system with a remote first terminal remotely monitoring a PACS workstation to generate a remote signal requesting installation of software in response to an error at the workstation and a web-based server including an installer for simultaneously installing software to a plurality of PACS workstations responsive to the remote signal."

Examiner's Response:

See response to claim 11 above.

Simultaneous installation is taught by the combination of Zur (picture archiving communication system), networked (see Zur, fig. 1, items 16, 21, and sys-1 – sys-n.) as modified by a generic simultaneous install system as taught by Allison. It would have been obvious to use a simultaneous installation on a specific system (workstations using picture archiving software.). The Kobata reference provides the features of software updates, log files and error detection / correction. Kobata collects user information and reports to a server. Server analyzes the data for errors and provides corrective measures by downloading software to the client over the Internet.

(D) As Applicant has noted on page 13, 1st paragraph, regarding claim 12, the combined art does not teach or suggest "generating a remote signal at a first PACS workstation for instructing the web-based server to install software at other PACS workstations on the same system."

Examiner's Response:

See response to claim 12 above.

Kobata collects data from the client and reports to the Server. The Server installs software at the client to correct error conditions.

(E) As Applicant has noted on page 13, 3rd paragraph, regarding independent claim 19, the combined art does not teach or suggest "connecting to a web-based server from a remote terminal on the Internet, instructing the web-based server to update pre-existing software on a plurality of PACS workstations in communication with the web-based server, and simultaneously updating the pre-existing software on the plurality of PACS workstations."

Examiner's Response:

See response to claim 19 above.

Simultaneous installation is taught by the combination of Zur (picture archiving communication system), networked (see Zur, fig. 1, items 16, 21, and sys-1 – sys-n.) as modified by a generic simultaneous install system as taught by Allison. It would have been obvious to use a simultaneous installation on a specific system (workstations using picture archiving software.)

(F) As Applicant has noted on page 14, 2nd paragraph, regarding independent claim 5, the combined art does not teach or suggest "identifying an error occurring at one or more PACS workstations based on an error indicator retrieved from one or more files at one or more PACS workstations at a remote terminal in communication with a web-based server"... "directing updates of special-purpose medical imaging software from a remote terminal."

Examiner's Response:

See response to claim 5 above.

The Kobata reference provides the features of software updates, log files and error detection / correction. Kobata collects client information. The server retrieves the data. The server provides corrective measures by downloading software to the remote client.

(G) As Applicant has noted on page 14, 3rd paragraph, regarding independent claim 14, the combined art does not teach or suggest "generating a remote signal at a remote terminal in

response to an error occurring at a PACS workstation connected to a web-based server, retrieving data from one or more PACS workstations in response to the remote signal, and providing remote identification and correction of an error via the web-based server at one or more PACS workstations by updating software stored on one or more PACS workstations." Kobata does not disclose a method for updating multiple clients...rather it downloads software to one specific client..."

Examiner's Response"

See rejection of claim 14 above.

The Kobata reference is not used for "updating multiple clients". Simultaneous installation is taught by the combination of Zur (picture archiving communication system), networked (see Zur, fig. 1, items 16, 21, and sys-1 – sys-n.) as modified by a generic simultaneous install system as taught by Allison. It would have been obvious to use a simultaneous installation on a specific system (workstations using picture archiving software.)

The Kobata reference provides the features of software updates, log files and error detection / correction. Kobata collects client data. The data is sent to the server. Analysis at the server detects the error condition. Corrective measures are taken by downloading software to the client.

(G) As Applicant has noted on page 15, 2nd paragraph, regarding independent claim 17, the combined art does not teach or suggest "remote analysis of log data from each of a plurality of PACS workstations in communication with a web-based server to indicate an error at the

plurality of PACS workstations and remote correction of the error at the plurality of PACS workstations from a remote terminal using the web-based server."

Examiner's Response:

See rejection of claim 17 above.

Zur disclosed PACS workstations in communication with a server.

The Kobata reference provides the features of software updates, log files and error detection / correction.

Examiner maintains the rejection of claims 1-20.

PACS networked systems and medical imaging systems are well known in the art. Simultaneous updates to remote client workstations are well known in the art. Monitoring client workstations for errors, logging errors, and notification are well known in the art.

Conclusion

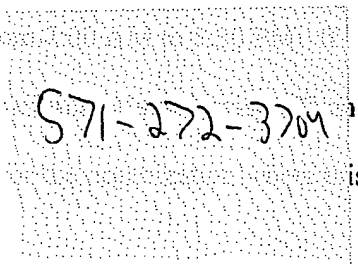
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 6,226,784 to Holmes et al., (Monitoring software system and delivery schedule for distribution of software.)

U.S. Pat. No. 6,223,345 to Jones et al., (Client package build engine.)

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (703) 305-4564. The examiner can normally be reached Monday through Thursday, f


attempts to reach the examiner by telephone are unsuccessful, th
is
Dam can be reached on (703) 305-4552. The fax phone number
application or proceeding is assigned is 703-872-9306.

After October 25, 2004, examiner can be reached at new telephone number (571) 272-3704. Supervisor, Tuan Q. Dam can be reached at (571) 272-3694.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mary Steelman

09/08/2004

TUAN DAM
SUPERVISORY PATENT EXAMINER

OIPE JC 131 JUL 12 2005 PATENT & TRADEMARK OFFICE

12528U501

WMW
(NE
CB

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09/472,290	12/27/1999	MAQBOOL PATEL	15-IS-5298	8556

7590 01/04/2005

SCOTT P MCBRIDE
MCANDREWS HELD & MALLOY LTD
34TH FLOOR
500 W MADISON STREET
CHICAGO, IL 60661

RECEIVED
JAN 11 2005
McANDREWS, HELD & MALLOY

EXAMINER	
STEELMAN, MARY J	
ART UNIT	**PAPER NUMBER**
2122	

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

RESPONSE DUE: Jan 03, 2005
Adv Action
Inc. 1mo EOT

OIPE JC 131
JUL 12 2005
PATENT & TRADEMARK OFFICE

Advisory Action

Application No.	Applicant(s)	
09/472,290	PATEL ET AL.	
Examiner	**Art Unit**	
Mary J. Steelman	2122	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 22 November 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1 114.

PERIOD FOR REPLY [check either a) or b)]

a) ☐ The period for reply expires _____months from the mailing date of the final rejection.

b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1 704(b)

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2. ☒ The proposed amendment(s) will not be entered because:

   (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);

   (b) ☐ they raise the issue of new matter (see Note below);

   (c) ☒ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: *See attached sheet*.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.

4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☐ The a)☐ affidavit, b)☐ exhibit, or c)☐ request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection

7. ☒ For purposes of Appeal, the proposed amendment(s) a)☐ will not be entered or b)☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:

   Claim(s) allowed: _____.

   Claim(s) objected to: _____

   Claim(s) rejected: *1-20*.

   Claim(s) withdrawn from consideration: _____.

8. ☐ The drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10. ☐ Other: _____

In response to proposed Amendment submitted 22 November 2004:

Amendment to claim 11 will be entered. The rejection of claim 11 remains unchanged.

In response to Remarks submitted 22 November 2004:

Applicant has argued, in substance, the following:

(A) As noted on page 9, last paragraph, through page 10, 1st paragraph, "There is no error correction, error analysis, or software update functionally mentioned or even envisioned in Zur...Zur is wholly inappropriate..."

Examiner's Response:

Zur is not relied upon for error correction or analysis. Zur (col. 1, lines 6-8) "relates to systems and methods for **management** of X-ray imaging facilities **and services**, specifically digital X-ray imaging facilities...(col. 1, lines 44-45) services **including the steps of installing**..." (emphasis added)

(B) As noted on page 10, 2nd paragraph, "Allison neither mentions nor has any logical relationship to a medical environment or a picture archiving and communication system...Allison makes no mention of error detection or correction."

Examiner's Response;

Allison is not relied upon for error correction or analysis. There is motivation to install software (specifically picture archiving system) simultaneously on networked computers by combining the references of Zur and Allison, as Zur shows networked workstations running picture archiving software. A simultaneous install is a cost and time efficient method of managing networks (See response to (A) above.). Zur does mention that system costs are a consideration (col. 1, lines 33-34).

Allison provides for an automatic, **simultaneous installation of software on a plurality of clients**. (emphasis added) Allison noted (col. 1, lines 41-45) "the need exists for a method and apparatus for automatically installing...which does not require human involvement and which is capable of automatically installing...on large numbers of computers."

Thus a simultaneous installation of software on a plurality of distributed computers was well known in the art at the time of the invention.

(C) As noted on page 11, 4th paragraph, "...the Allison patent only discloses a computer and software testing system."

Examiner's Response:

Examiner disagrees. The Allison reference is relied upon for the feature of "simultaneous installation of software on a plurality of distributed systems."

(D) As noted on page 12, 2nd paragraph, "Kobata neither mentions nor has any logical relationship to a medical environment or a picture archiving and communication system..."

Examiner's Response:

Kobata is not relied upon for a picture archiving and communication system. Kobata is relied upon for disclosing remote software error detection and correction. The Kobata reference provides the features of software updates, log files and error detection / correction. Kobata collects client information. The server retrieves the data. The server provides corrective measures by downloading software to the remote client. Kobata: col. 4, lines 5-10, "expert system...can remotely identify problems...remotely identify solutions...", col. 4, lines 5-10, "expert system...can ...remotely fix problems...remotely install software..."

(E) As noted on page 13, paragraph 2, "Kobata's purpose is to monitor remotely the configuration ...and download software...to resolve compatibility problems. Because Kobata is focused on determining installation compatibility problems in personal computers, a person of ordinary skill in the art would not have looked to it in attempting to develop a remote installation and error correction system for a PACs."

Examiner's Response:

Examiner disagrees. Broadly, Kobata disclosed remote error detection / correction of software involving software updates. These limitations were known in the art at the time of Applicant's invention. A person of ordinary skill in the art would rely on this disclosure when developing a remote installation of software.

(F) As noted on page 13, 3rd paragraph, "the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention."

Examiner's Response:

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

(G) Applicant has provided a "theoretical combination" (page 15, last paragraph, page 17, 1st paragraph), of the systems resulting from a combination of the references provided by Examiner.

Examiner's Response:

Examiner disagrees at to how Applicant characterizes the references. Features from each reference are properly combined to overcome the limitations of Applicant's claims. A Picture Archiving and Communication System, a type of medical imaging software, is well known in the art. Simultaneous installation of software on remote computers is known in the art. Remote error detection / correction is known in the art. It would have been obvious to combine these features to produce Applicant's claimed limitations.

Zur (col. 1, lines 6-8) "relates to systems and methods for **management** of X-ray imaging facilities **and services**, specifically digital X-ray imaging facilities...(col. 1, lines 44-45) services **including the steps of installing**..." (emphasis added)

There is motivation to install software (specifically picture archiving system) simultaneously on networked computers by combining the references of Zur and Allison, as Zur shows networked workstations running picture archiving software. A simultaneous install is a cost and time efficient method of managing networks. Zur does mention that system costs are a consideration (col. 1, lines 33-34).

Allison provides for an automatic, simultaneous installation of software on a plurality of clients. Allison noted (col. 1, lines 41-45) "the need exists for a method and apparatus for automatically installing...which does not require human involvement and which is capable of automatically installing...on large numbers of computers."

Kobata disclosed (col. 1, lines 11-14), "This invention relates to the provision of data over the Internet...to provide appropriate software (software installation)...based on the user's infrastructure data." Kobata noted (col. 1, line 43) "installation problems" which occur most frequently..." The Kobata reference provides the features of extracting / analyzing data for error conditions, for the purpose of reducing installation problems.

Thus all references relate to installing distributed software. Management and services are provided to automatically install. Time and cost efficiency considerations and reduced installation problems are provided.

Examiner has relied on features disclosed in the references, which were known in the art, at the time of the invention, the combination of which would be obvious. PACs systems, a

specific type of medical imaging software used on distributed systems was well known at the time of the invention. Updating remote software, using a simultaneous installation technique was well known at the time of the invention. Error detection / correction techniques used on distributed systems, were well known at the time of the invention.

(H) As noted on page 18, 3rd and 4th paragraph through page 20, Applicant questions the extent of common knowledge and Official Notice taken. Specifically "update installation in response to an error condition being remotely identified" or "error condition detected" is well known in the art.

Examiner's Response:

Examiner did not take Official Notice in the Final Office Action. Examiner did repeat several times that a feature was well known in the art, and backed the statement up with a reference (Zur for managing PACs software, Allison for simultaneously updating remote software, Kobata for updating with considerations given to error detection & correction). Software updating and installation are classified under 717/168-178. Additionally, an entire art class (714) section is dedicated to error detection / correction. Without specific details regarding what type of error is detected, how it is detected, how it is corrected, Examiner feels justified in stating the error detection and correction is well known in the art. Broadly stating in the claim limitation that error detection / correction involves a medical imaging software application is not specific enough to be novel.

TUAN DAM
SUPERVISORY PATENT EXAMINER